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THE MAGAZINE FOR HEWLETT-PACKARD ENTERPRISE COMPUTING ▲ VOL. 7 NO. 6

JUNE 1993

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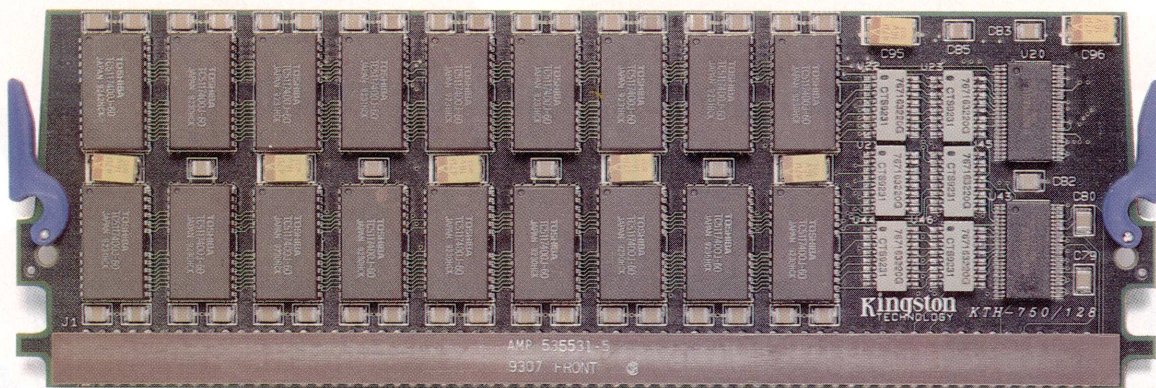
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# C O N T E N T S

JUNE 1993

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## 20 MULTIPLATFORM MELTING POT

By Paula Jacobs

With heterogeneous desktop platforms now a basic fact of corporate life, the ability to connect diverse clients is more critical than ever. This diversity raises an interoperability challenge — one that HP and third-party vendors are struggling to meet with viable standards-based solutions.

## 30 TERM LIMITS

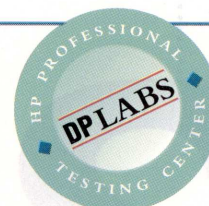
By Elaine Appleton

“Insourcing” — the latest byproduct of the re-engineering jargon virus — could liberate your finance department from exorbitant service bureau contracts. If your budget demands cutting operational costs, you may want to add “insourcing” to your vocabulary and consider bringing outsourced financial applications back inside.

## 34 ADVENTURES IN THE MEMORY TRADE

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Improved product reliability, lower manufacturing costs and intense competition add up to a long-term buyer's market for third-party memory — despite last year's short-term troubles with foreign tariffs,



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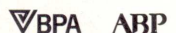
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# Humane Re-engineering?



By Don Marks



I recently participated in a video conference, co-sponsored by HP and a leading financial software vendor, at our local HP office in Valley Forge, PA. The session, which was attended by nearly 2,500 people at HP offices around the country, demonstrated the tremendous potential of computer-integrated multimedia systems — and the frightening extent to which the logic of downsizing permeates our thinking about people and technology.

Using HP's interactive television devices, conference attendees were asked a series of questions about what they expected from the conference. Simply by pressing a button on a keypad placed on the table in front of them, participants could influence the content of the discussion — within certain predefined limits, of course. Instant polling results were displayed on the screen as responses were entered and tabulated in real time. And when it came time for audience Q & A, the interactive TV device doubled as an audio hook-up, transforming the whole event into the direct marketing equivalent of Larry King Live!

The theme of the video-conference was “business process re-engineering” — that's shorthand for “the streamlining of corporate organizations to reduce costs and duplication of effort.” (Fight jargon with jargon, I always say.) The topic may seem weighty, involving as it so often does massive job losses — not to mention major cultural and technological changes for those in the re-engineered ranks. But it was handled with levity at this conference by redoubtable industry pundit Thornton May.

May, who helped pioneer the AIIM imaging technology show and has done much to promote imaging-enabled workflow applications, apparently fancies himself the computer industry's version of George Will. Complete with bow tie and glib remarks, he cynically chuckled his way through a ruthless discussion of re-engineering's happy implications for the corporate bottom line. “Let's face it,” he leveled with the audience at one point, “what we're talking about is killing clerks. We want to see clerk guts all over the place.”

When a lone conference participant (it wasn't me) pointed out that this wasn't necessarily the most considerate approach to solving business problems, May conveniently lapsed back into the Orwellian MBA-speak that more typically accompanies bad news for workers. “Business process re-engineering,” he opined

dutifully, “can provide the most humane way to diminish your company's direct labor force.” He then proceeded to explain how such a humane re-engineering scenario might work.

Let's suppose your company has 200 data entry clerks, and at the end of your re-engineering project, you plan to reduce that number to fewer than 100. According to May, the humane course of action would be to inform all 200 clerks of your downsizing plans at the start of the project, then promise to retrain all of them on the new technology, regardless of whether they will make the cut. This, May noted, offers the added advantage of enlisting all employees' cooperation in the re-engineering project. And those who ultimately are laid off at least have the consolation of entering the job search with new skills. Positively heartwarming, isn't it?

## The Tougher Questions

Is there really anything humane about this approach? I don't think so. After all, most “business process re-engineering” involves automating routine clerical tasks, and you can't exactly retrain someone for a support job that no longer exists. And besides, could it possibly help anyone to enter the job market with newly-garnered knowledge of Microsoft Windows and how to use a mouse? Could the ability to point and click one's way through a mindlessly intuitive user interface ever be considered a resume-enhancing skill? Even a re-engineering guru would have to admit the plain answer to these questions is “no, indeed” — that is, he would if he had the clerk guts to examine the consequences of the “business practices” he advocates.

We in the computer industry historically have thought of the work we do as “labor-saving,” and our efforts do, generally speaking, result in the ability to do things more efficiently. But perhaps it's time we started to think about “labor-saving” from another perspective. The real challenge for technology managers right now shouldn't be to eliminate jobs — anyone with the gall or gumption to hand out a pink slip can do that.

Rather, our objective should be to deploy new technologies — like workflow software and interactive multimedia — in ways that productively employ those now threatened by the onslaught of re-engineering. The question of the hour isn't how to streamline workflow per se, but how to streamline in a way that provides all employees with better working conditions and better quality jobs. The answer to that question will be a labor-saving insight, indeed.





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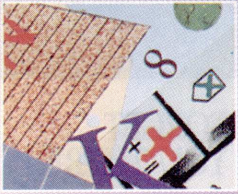
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## INDUSTRY WATCH

**Bill Sharp**

For a tech-weenie engineering company that several years ago didn't know software from seat covers, HP finally seems to be getting the hang of this software stuff in at least a few markets. One of its most outstanding products is HP SoftBench, which just recently made the jump from the technical world to the commercial marketplace.

SoftBench is HP's CASE platform that supplies an encapsulation technology to make software developers' jobs easier by providing a consistent environment to use with multiple CASE tools. It's just the sort of enabling, multiplatform software product that seems to be attracting clever development organizations these days.

HP SoftBench is a de facto CASE development environment standard, with:

- 20,000 users.
- 50 CASE Channel Partners.
- 70 products built on SoftBench by third parties (more, claims HP, than for any other software development framework).
- More than 15 hardware and operating system platforms supported, including all of HP's largest computer competitors. Expect to see OS/2 and NT added to this list before long.
- Licensees including Control Data Corp., Informix, IBM, Siemens Nixdorf in Europe, SAIC, Objectivity and Institute for Information Industry (III) in Taiwan.

### SoftBench Goes Commercial

In the computer business today, if you aren't pulling ahead, then you must be falling behind, so HP is aggressively moving SoftBench into the commercial realm. Lee Huffman, commercial SoftBench program manager for HP's

# Best CASE Scenario

For a tech-weenie engineering company that sev-



Software Engineering Systems Division (Fort Collins, CO), says that more than 40 percent of SoftBench sales during 1992 were to firms developing business applications. This is quite a change for a product that started out four years ago as a laboratory dweeb's delight.

Huffman says SoftBench now boasts more than 40 business applications, with emphasis on:

- Management information systems.
- Accounting.
- Human resource and personnel.
- Customer information systems.
- Inventory control.
- Financial industry and banking.
- Executive information systems.

HP's newest Channel Partners include CGI Informatique, KnowledgeWare, Texas Instruments, Visual Edge, Intersolv, IBM, Legent, JYACC, Netron, IDE, Micro Focus, Speedware, Uniface and Softeam. HP and Micro Focus are working on a COBOL SoftBench product because COBOL remains quite popular for business application development.

Later this summer, Huffman says SoftBench will support improved graphical user interface (GUI) development and enhanced SQL support for Sybase, Oracle and Informix database development.

Among the partners working with SoftBench is Bridge Information Systems,

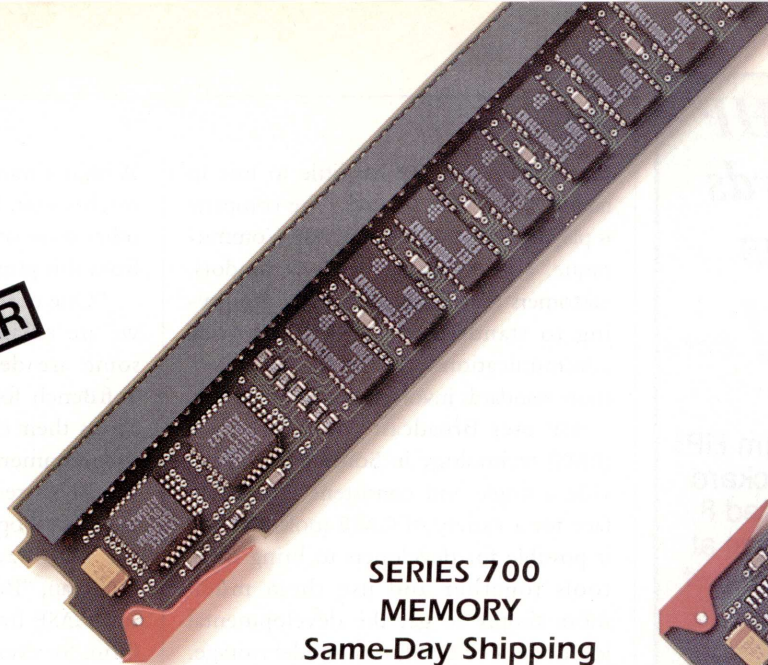
now developing in C++ on SoftBench. The firm will produce a financial services commercial database. Richard Irwin and Associates, Ltd. conducts development and systems integration work for large firms. They use SoftBench to integrate Informix and CaseWare tools for MIS customers.

### Meeting The Standards

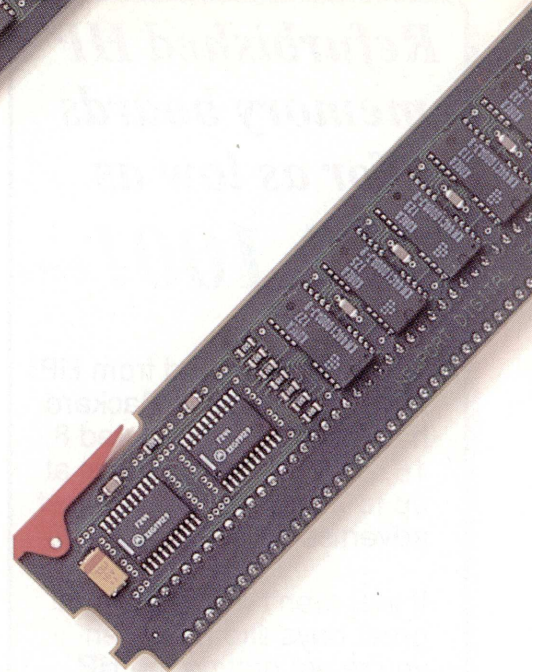
A continuing problem for application developers has been the lack of tools that operate across a broad spectrum of platforms. Without such tools, software designers must develop a product on one platform, and then go through a frustrating and time-consuming series of ports to get the product onto other platforms. This causes long delays in moving to multiple markets and creates significant quality and support problems along the way. SoftBench is one of the very few products that provides developers with the ability to develop once and deploy across multiple platforms. The fact that SoftBench now makes multiplatform development possible in both the technical and commercial arenas makes it even more attractive.

As it is doing in several markets, HP with SoftBench functions as a promoter of standards. With SoftBench a de facto





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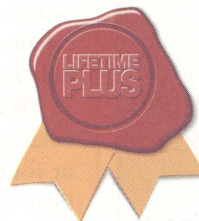
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standard already, HP has little to lose in taking to the high ground. The company is playing an active role in CASE Communique, a group of applications vendors, customers and framework providers trying to standardize CASE framework communications. And you can expect more standards involvement in the future.

HP uses Broadcast Message Server (BMS) technology in SoftBench to provide a single and consistent user interface for a variety of CASE tools, making it possible for developers to bring these tools together and use them much more simply to get the developmental job done. For CASE tool model storage, HP endorses the PCTE standard from the ESPRIT program in Europe, another standard.

## HP Builds Its CASE

The upshot of all these efforts is lots of increased interest in SoftBench from developers who now see the product as the best development system for new applications in commercial as well as technical environments. HP's Huffman tries to hide his smile, but he is clearly delighted.

"We have a number of firms we are talking to," he allows. "In the past three or four months we have sent out more than 50 developer information kits, and more than 30 of these companies called back to get started with encapsulation."

Within a month or so after this column reaches you, HP will be announcing another wave of new converts to SoftBench from this group.

"One of the things we see now is that we are talking to major customers and some are deciding to standardize on SoftBench for application development across their enterprise in both technical and commercial areas," says Huffman. The most recent of these include a regional Bell operating company and a major manufacturing company. Adds Huffman, "Both CIOs say they will adopt our CASE framework on multiple platforms for everybody developing software, whether it's for a jet engine, accounting or a telephone switch."

"We are working with other CASE tools companies to give integrated solutions to customers," says Huffman. "If they want their own tools, they can integrate them into the environment because SoftBench makes that easy. If they want third-party tools that are not part of SoftBench, we have a program to get them involved as well. If that vendor doesn't want to encapsulate, the customer can do that themselves even without access to the source code. Across the board we can create a customized development environment. SoftBench is very different from other CASE environments."

## HP SOFTBENCH: THE CASE FOR COSE

No sooner did we predict success for HP's SoftBench standards effort than — zingo, it happened! Just as we were headed for the presses with a stack of paper and a bucket of ink, a new consortium formed, with a new consortium objective: A common desktop environment across UNIX platforms offered by HP, IBM Corp., The Santa Cruz Operation, Inc., Sun Microsystems, Inc., Univel and UNIX Systems Laboratories, Inc. The Common Operating System Environment (COSE) is cleverly pronounced "cozy" to keep people confused.

So why should folks interested in SoftBench care about a group that has all

the potential to be (yawn) another standards body? A crucial part of making the COSE initiative effective is developing common application programming interfaces (APIs), including a standard message server. That standard will be a combination of HP's Broadcast Message Server (BMS) from SoftBench and ToolTalk from Sun Microsystems. The COSE folks claim migration for current users to the new APIs, whatever form they ultimately take, will be transparent. That and 50 cents might buy you a cup of coffee, but look for more details on COSE APIs in next month's issue — right now, we're headed for the press room.

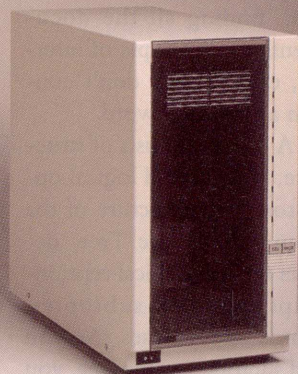
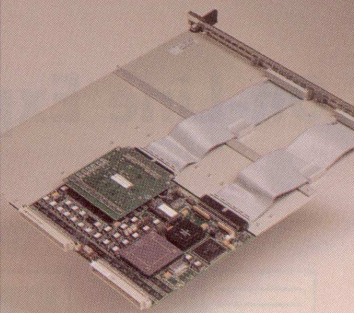
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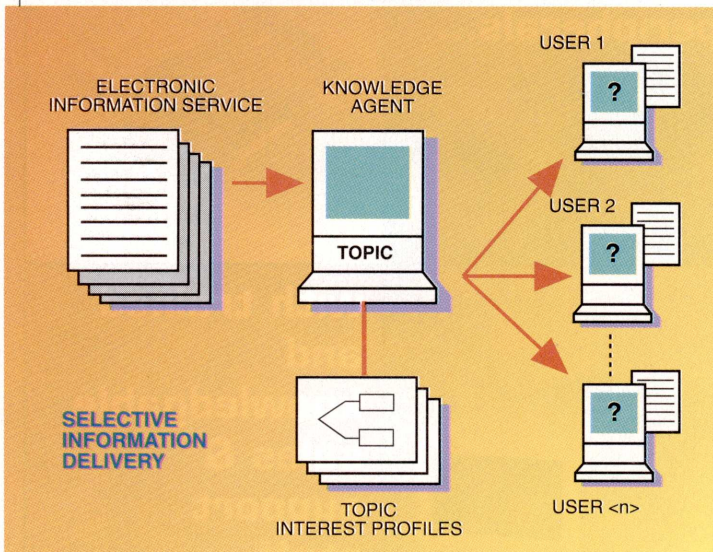
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The TOPIC family consists of TOPIC, TOPIC REAL-TIME and TOPIC SDK. TOPIC supports more than 20 text and image filters for popular word processing, technical publishing and imaging systems. Advanced capabilities include the TOPIQL command inter-

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The TOPIC family features concept retrieval technology, which lets you search for ideas or concepts in documents that might be located anywhere on a network.

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TOPIC supports HP-UX and its price ranges from \$15,000 to \$150,000. — *Lonni Wright, Contributing Editor*

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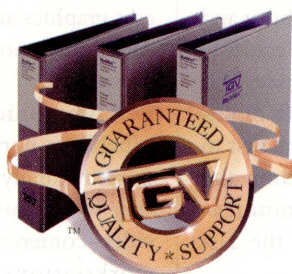
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## Multimedia Is The Message



which permits interactive on-line meetings. Participants in a Virtual Conference Room video-conference can see and sense the reactions of colleagues at several remote locations. These on-line conferences can be interactively initiated — via a point and click interface — by participants, and additional users can join a meeting already in progress at any time. Video-conferences also can be stored for later review.

Other features of Communicue! include a Shared Whiteboard workspace (similar to that of HP's MPower product) which allows video-conference participants to interactively annotate documents, drawings and video frames — and a Shared Writeboard, which distributes a blank text screen on which users can post comments or cut and paste ASCII data. Users can also share and edit graphics and image files, ASCII files, notes and video frames.

Communicue!'s Audio capability permits users to speak naturally and comfortably when participating in a video-conference from their workstations — without having to rely on the telephone.

Dan Harple, president of InSoft, says Communicue! offers numerous practical advantages to businesses, aside from making Marshall McLuhan's prophecies a reality. "It's enhancing group communications and creativity. Our customers are getting higher quality products

to market faster and more cost-effectively. Other customers have reduced travel costs by eliminating what they categorize as 'marginal' trips," says Harple.

HP's Jan Silverman, marketing program manager for the 700 Series, endorses Harple's pragmatic vision of multimedia whole-heartedly. "Viable, deliverable applications like Communicue! provide solutions that achieve measurable returns," says Silverman. "Enterprises can have more confidence in multimedia," he notes, "when it supplies tools that actually improve product quality and profitability at a cost-justifiable price point."

Communicue! offers a frugal approach to a fanciful technology, one that blends the shrewd economy of InSoft's Pennsylvania Dutch country surroundings with the unbridled technological enthusiasm of McLuhan's "global village". Pricing for a single-user version of Communicue! with full motion video is \$1,625. It's available only for the 7100-based HP 9000 715, 725, 735 and 755 systems, which provide audio and video support, running HP-UX 8.0.7 or higher and Motif 3.0.

*InSoft's  
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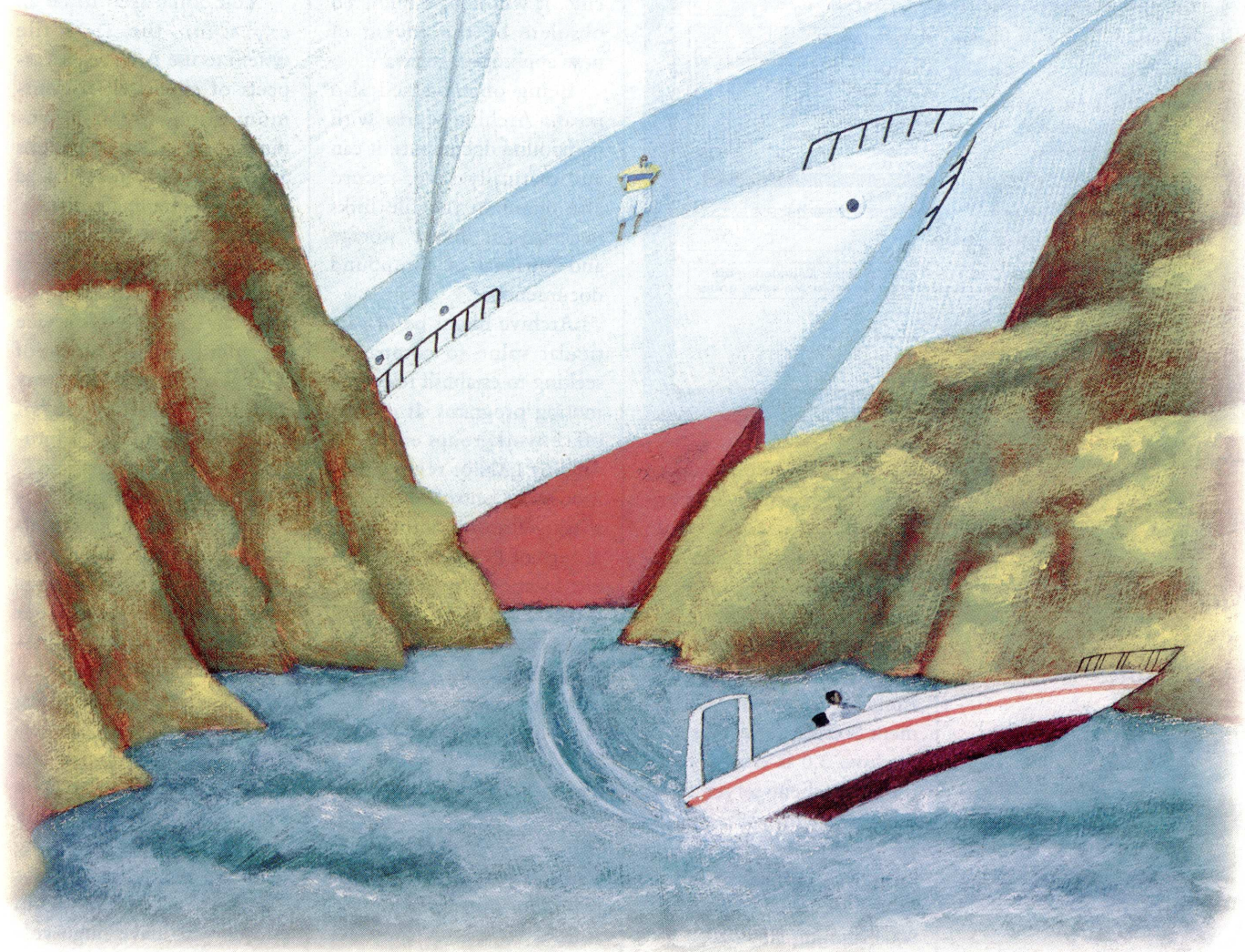
**A**s if to prove the plausibility of Marshall McLuhan's multimediated "global village," InSoft Inc., developer of the Communicue! video conferencing solution, tucked its headquarters in a small, central-Pennsylvania town. Located in Mechanicsburg, PA, in the midst of Pennsylvania Dutch country, surrounded by Civil War battlefields at Gettysburg and neighboring some decidedly low-tech Mennonite and Amish farms, InSoft nonetheless was among the first to tap what may become the predominant communications technology of the 21st century — video.

Communicue!, which has been available on Sun SPARCstations for some time, is now available for the latest generation of HP 9000 Series 700 systems. The workgroup application consists of a series of multimedia software modules, including what InSoft calls "The Virtual Conference Room,"

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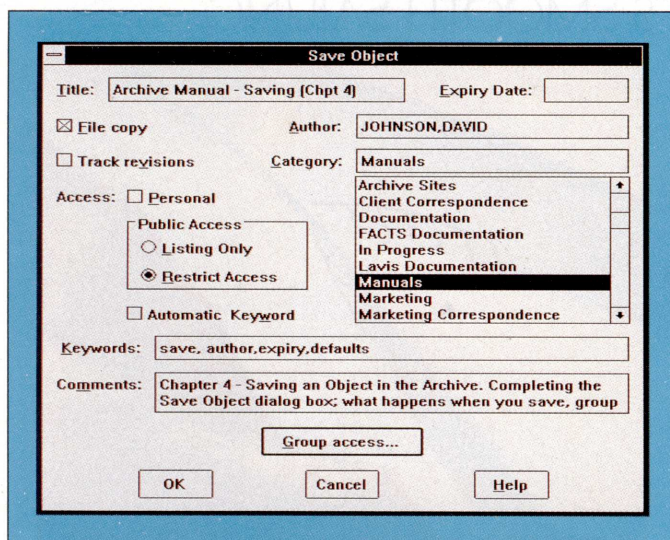
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## Object-Oriented Archive



*JCST's Document  
Management Software  
Does Things  
That File-Based  
Systems Can't*



If PCs are a vital part of your production environment, and the work you do involves users sharing and exchanging files, then you might want to do some research into the Johnson Computer Software Team's Archive Document Management Software (Archive 3.0). Archive 3.0 is designed for use with client-server computing systems where the clients are PCs and the server is either an HP 3000 running MPE V or MPE/iX, or an HP 9000 running HP-UX.

Unlike most document management software, which relies solely on file-based solutions, Archive makes use of object-oriented technology. Object-orientation allows Archive to work with any type of document or image created on a PC. DOS, Windows or NewWave, documents, spreadsheets, graphics, scanned images, multimedia, video or sound can be stored, searched and retrieved from the server with drag and drop

operations. Because nothing in Archive is application specific, it will not be rendered obsolete by the advent of new application software.

Being object-based also means Archive works with compound documents. It can automatically save, record and maintain the file links necessary for "intact" storage and retrieval of compound documents.

Archive might be of particular value to companies seeking to establish telecommuting programs. It enables office workgroups either locally by LAN or remotely by modem. Controlled object-sharing features allow these groups of PC users in different locations to access each others work.

Archive also provides a multilevel access system that allows documents to be designated private or public. Private documents are known only to their owners. Access to public documents can be restricted both in terms of privilege (list, copy, edit, take out) and the personnel to whom they are available.

To facilitate these new working arrangements, Archive's Administrator module provides centralized control of workgroup setups. The system administrator can disable or reassign the access rights of any user. Work stored with Archive is automatically transferred to the server where it's subject to the organization's regular tape back-up procedures and protected by the server's

more rigorous security features.

You don't need to be an expert on the DOS file system to use Archive. All aspects of client-server communication, logon procedures and modem operations are totally automated and completely transparent.

"The nicest thing about Archive is you can use it with virtually no training," says Ian Croft, senior vice president and treasurer of The Woodbridge Company Limited. "When you sit down to use it, it's so intuitively obvious what to do."

The Woodbridge Company controls a diverse, multinational business empire, and their portfolio of businesses includes newspaper publishing, retailing, real estate development, airlines, travel service, legal publishing and on-line financial data services. JCST developed the Archive system for The Woodbridge Company about a year ago. "It's getting a lot of acceptance," says Croft. "Particularly from people who have huge volumes of files... Our tax department just loves it. They can retrieve any file in the 500 companies in the group." — Lonni Wright, Contributing Editor

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## UNIX Or Bust

*International Software Developer Software AG Shows Its Customers The Economic Advantages Of Moving To UNIX*



**"When we saw the UNIX parade coming, our choice was either to get run over, or grab a flag and wave it."**

Michelle Perry  
Marketing Manager,  
Software AG

**"I** had been working with IBM systems since 1976. I had some knowledge of UNIX — but not much," says Sigurjon Gudmundsson, head and sole staff member of the of the Icelandic Cancer Society (ICS) computer department, in Reykjavik, Iceland. He expresses what has become an almost universal anxiety at the prospect of moving off an IBM central processor to another platform. ICS made the move from an IBM 4381 to an HP 9000 model 817 in September 1992.

The downsizing trend from IBM central processors to more economical and functional UNIX-based platforms has reached some unexpected places — noticeably enabled by HP and international software developers like Software AG (Darmstadt, Germany and Reston, VA).

"When we saw the UNIX parade coming, our choice was either to get run over, or grab a flag and wave it," says Michelle Perry, marketing manager, Software AG. It was a risky choice because for the 24-year-old company, best known for the Adabas DBMS, the Natural 4GL and, most recently, the entire suite of distributed computing applications, it meant helping

its predominantly IBM mainframe and DEC VAX customers move off their mainframes onto UNIX boxes. "That doesn't help our mainframe maintenance position, but we're in a much better position for the future," Perry says.

Available since April 1992, with prices varying from \$1,000 to \$98,000, depending on the number of users and hardware configuration, the HP-UX versions of Software AG's products enable customers to move mission-critical applications from mainframes to more economical platforms, like the HP 9000 series. "If you are a Software AG customer today, you can move your applications, both the Adabas and Natural pieces, down to a UNIX platform," Perry says.

Software AG has been an HP preferred business partner for more than three years. With Software AG's solid background in mainframe products, it was a perfect match for HP. "They pursued us," Perry explains. "HP felt that we were the kind of company [it] needed on [its] platform." As a hardware vendor, HP looked good to Software AG, too. "Among the mainframe alternative providers, HP has been the most aggressive," Perry says. "HP has had time to work the bugs out of their products while other vendors are just getting started."

The partnership has paid off. Last December Adabas recorded a TPC-A benchmark of 303.1 transactions per

second (TPS), at a cost of \$5,913/TPS, running on an HP 9000 model 800 I50, both faster and less expensive than Oracle (184.5 TPS at \$9,946/TPS on the same HP platform), its closest rival.

Not only has Software AG worked closely with HP at the corporate level but the two companies have developed local relationships as well — as they have in Iceland. ICS has been a Software AG customer since 1984, using both Adabas and Natural.

ICS acquired the Adabas and Natural base products for HP-UX from Software AG, then ported their applications to the HP platform. Low cost as well as flexibility initially attracted Gudmundsson to the HP system. His primary goal was to develop a client-server architecture allowing shared processing between the HP server and PC clients, rather than the diskless terminals ICS had been using with the IBM host. The HP server now supports 27 PCs and terminals. And according to Gudmundsson, the transition wasn't difficult.

How does Gudmundsson like the UNIX world since ICS migrated? "Now I like it fine!" he says.—*Sam Dickey, Contributor*

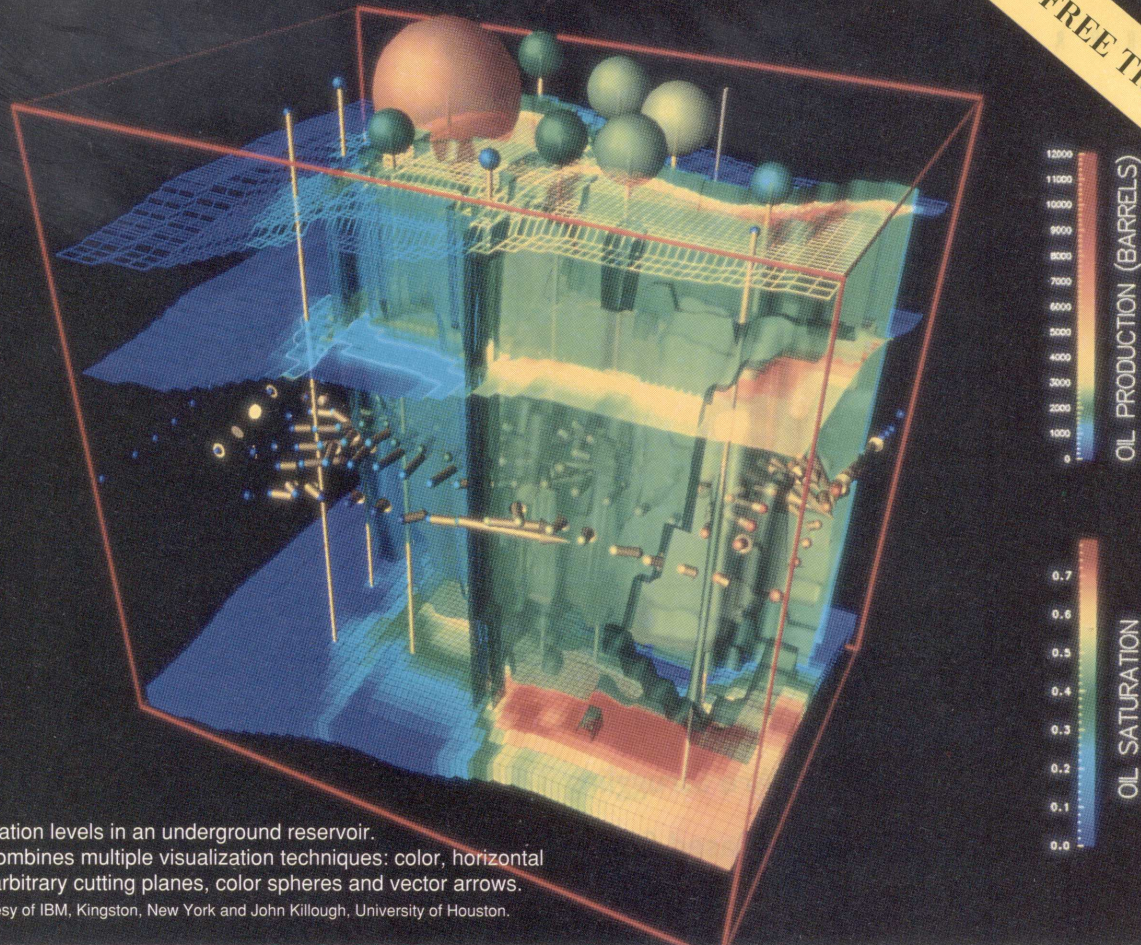
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# Multiplatform Melting Pot

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Desktop Diversity Raises An Interoperability Challenge — One That HP And Third-Party Vendors Are Struggling To Meet With Viable, Standards-Based Solutions

*With heterogeneous* desktop platforms now a basic fact of corporate life, the ability to connect diverse clients is more critical than ever. Despite significant efforts over the past few years to provide users with easier integration, integrating UNIX and PC LAN environments is not yet completely plug and play.

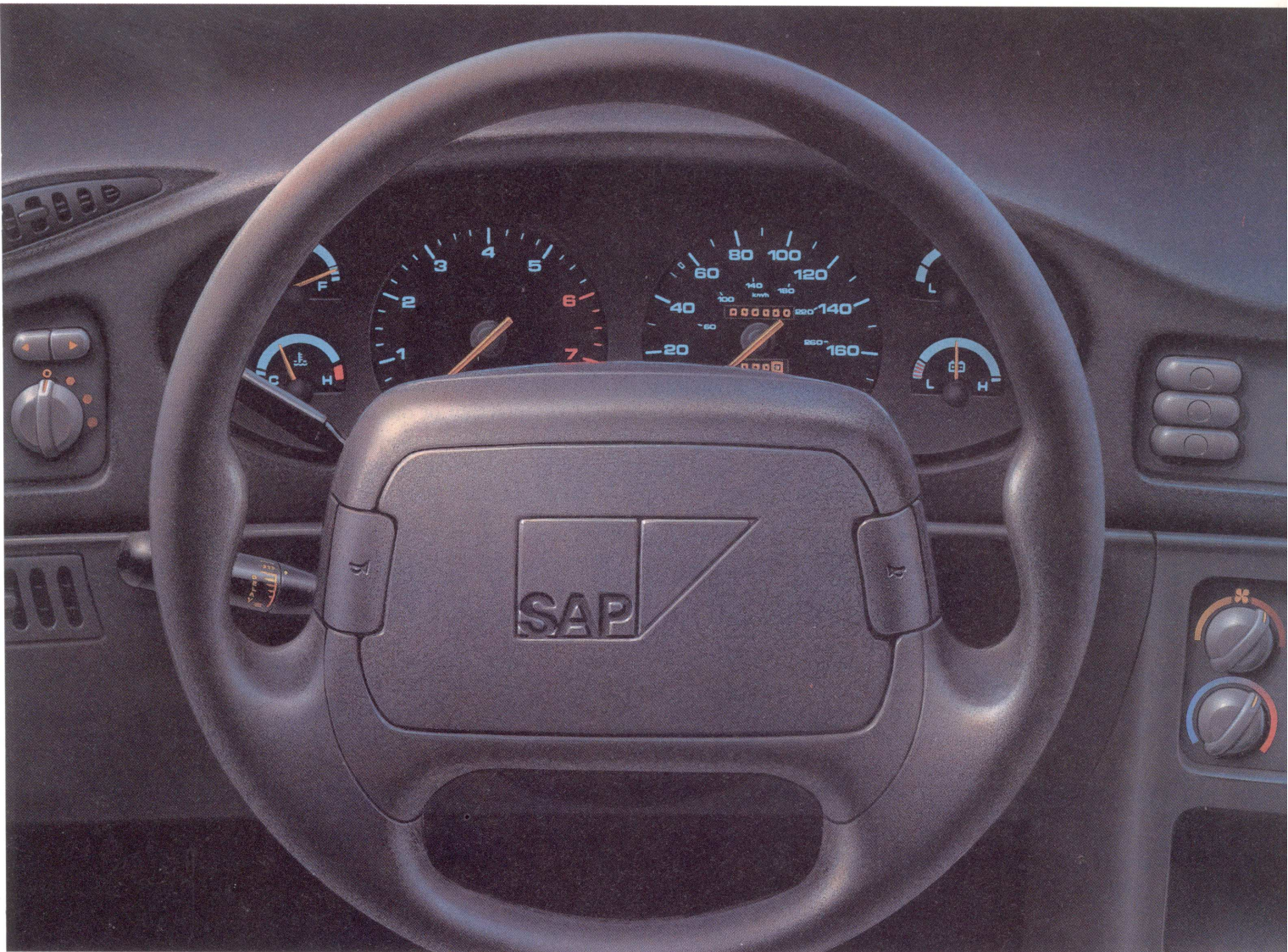
What are the key desktop integration requirements? They include access to applications and data that reside on a server and the ability to share file and print resources across a LAN. UNIX machines should provide the ability to operate as file and resource servers to PC workstations. Users expect that integration of DOS, OS/2, Windows, UNIX and diverse networking environments will be completely transparent, while system managers demand minimum disruption to administrative and support procedures.

Complexities still exist on both the UNIX and PC sides because of an abundance of networking, protocol and PC hardware issues that come into play. In many cases, protocol stacks were designed both for PC and server environments under the assumption that they take complete control of the networking hardware; consequently, if more than one protocol stack is required on a system, duplicate network hardware may be

By Paula Jacobs



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required. Often, PC and UNIX file formats differ, which means that even if PC and UNIX systems can exchange files, applications cannot interpret the data in the files. Far too often, PC to UNIX networking degenerates into simple terminal emulation.

Fortunately, several vendors have recognized these shortcomings. The result has been a variety of different and creative solutions that address key PC and UNIX integration issues and facilitate true interoperability.

### Pick A Client, Any Client

**H**EWLETT-PACKARD OFFERS products that provide access from PC, Macintosh and workstation desktop environments running DOS, OS/2, Windows, Macintosh and UNIX platforms. The company supports the standard network media, including Ethernet and Token Ring. HP supports desktop integration protocols, including Novell

NetWare SPX/IPX, Microsoft LAN Manager and TCP/IP. The company's networking products are compatible with OSI, TCP/IP, and SNA transports and services for communications among servers.

Presently, HP is working on a standard Winsock, a standard interface to TCP/IP from Microsoft Windows, and it plans to introduce Native NetWare by the end of 1993. Support for the latest LAN Manager clients on both HP 3000 and 9000 systems will continue. For the HP 9000, the company will also provide LAN Manager/X 2.1 functionality for domain administration, file replication, PC-based administration, and additional security. According to a company spokesperson, HP is investigating both Windows NT and Univel, but has no definitive plans to port either product to PA-RISC and is waiting for product acceptance.

"The diversity of the desktop environment is the greatest challenge today," emphasizes Ann Marie Cortner, HP product manager for LAN Manager. She says that HP's strategy is to address PC-UNIX integration requirements with referenceable

## SUCCESS STORIES: THREE WHO ACHIEVED DESKTOP INTEGRATION

Textile manufacturer Hoechst-Celanese uses WRQ's Telnet Connection for TCP/IP connection on a multiprotocol network that includes more than 300 PCs, HP 3000 systems, TI systems and a VAX cluster. According to Systems Analyst Bradley Kurtz, this strategy makes it easy for PC users to login to a node on the network, request applications, and copy files back and forth transparently. The company also uses WRQ's 3000 Connection for LAT, Telnet, and TCP/IP connections with the HP 3000 systems.

Implementation of across-the-board networking standards is one objective of the City of Newport Beach, California. The City's network currently supports four computer hardware platforms: HP 3000 systems, HP 9000 workstations, DOS-based PCs and Apple Macintoshes. There are three different LAN environments: Ethernet with TCP/IP connects the HP-UX and MPE systems, Ethernet with Novell NetWare (IPX) links the DOS-based PCs, and Apple's LocalTalk with the AppleTalk protocol stack supports the Macintoshes.

At the application level, the City plans to standardize with Microsoft Mail and Word for Windows for word processing across all municipal departments. While the City has decentralized IS and budgeting, implementation of standards will help streamline operations. By improving productivity at the desktop, the City hopes to share data and resources among departments in order to be more responsive to the community.

The local networks in City Hall, the Police Department, and the Utilities Department are connected over a T1 voice and data link. The Police Department has two HP 3000 systems on a ThinLAN connected to the T1 equipment via an HP bridge, and also maintains an AppleTalk network of 50 Macintosh computers connected to the HP network via Cayman Systems GatorBox (for AppleTalk to 802.3 conversion). At the Utilities Department, there are HP 9000/720 and 320 systems and X Terminals, with an AppleTalk network that

connects the 20 Macintosh computers via a GatorBox. City Hall runs GIS, CAD and Informix applications on an assortment of HP systems, and also supports a 70-user Novell network.

"Networking Macintoshes is easy because of their built-in capabilities," says Mike Spohn, data processing manager at the City of Newport. "The trick is to provide communications between the HP and Novell environments."

WRQ's Reflections Series is used on both the Macintoshes and PCs for TCP/IP packet routing. To connect to the HP system, Novell NetWare 3.11 is used, with Novell NLMs (NetWare Loadable Modules) for configuring the Novell file server as a TCP/IP router. The City of Newport also uses WRQ's 3000 connection for NS/VT and Telnet connectivity between the HP systems.

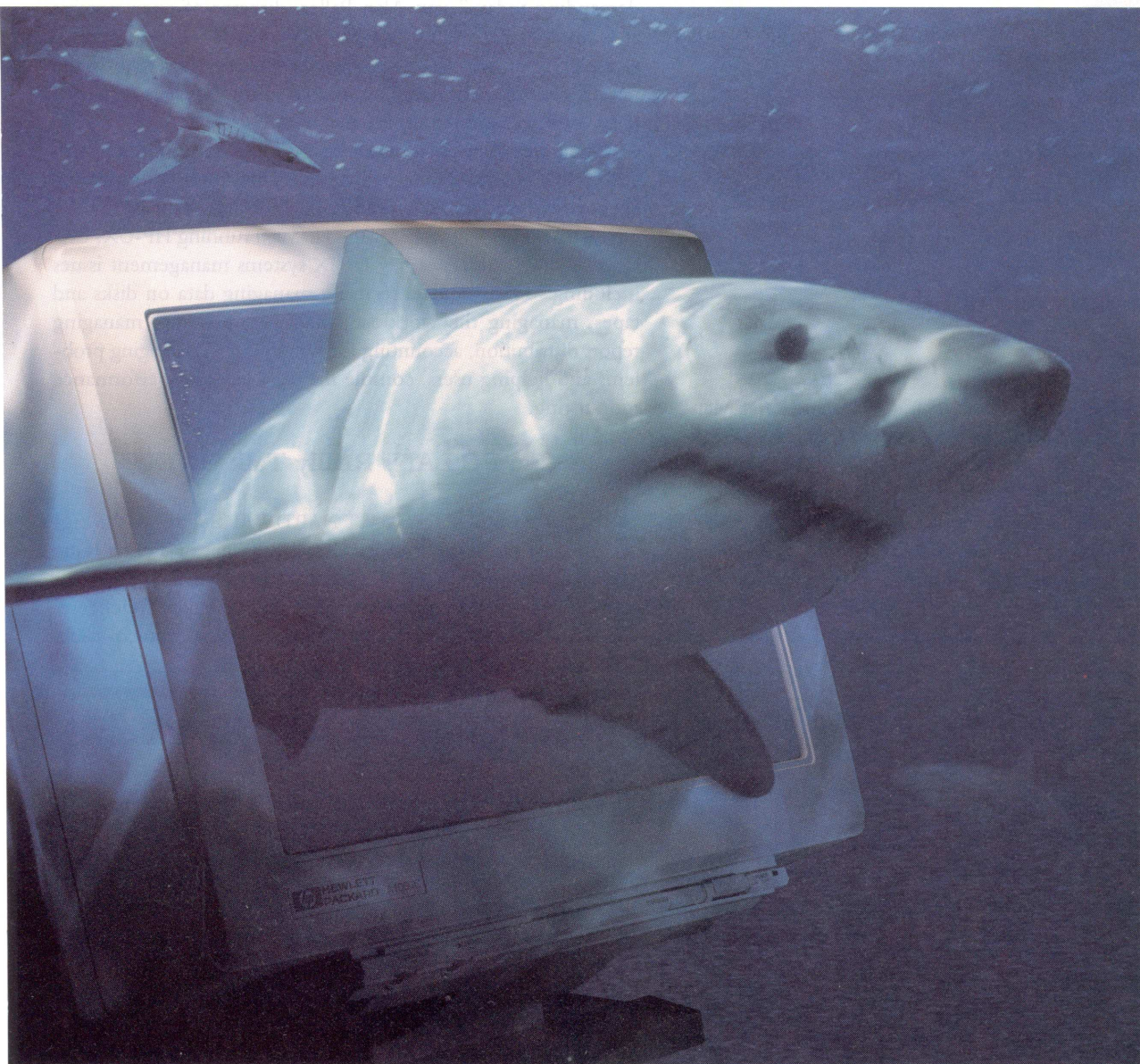
Still another multiplatform success story is 3M Corp. The company has a 23,000 node network that connects more than 100,000 users at 100 offices and manufacturing sites throughout the United States. The network includes HP 3000 and 9000 computers, DEC and IBM systems, and thousands of PCs. There are more than 10,000 PCs at corporate headquarters in St. Paul, including more than 2,000 to 3,000 networked PCs.

The company has developed a standard design configuration that includes the TCP/IP stack, terminal emulator and LAN Manager to connect the PCs and the HP 9000s. All applications run under Microsoft Windows. Because support in such a large systems environment is critical, 3M's strategy is to work with established, reliable vendors in order to streamline support.

"The use of standards makes it easy to integrate PCs and UNIX systems," says Mark Anderson, design specialist at 3M Corp. "However, the greatest connectivity issue is planning and designing of the physical network, which involves determining the right protocols, terminal emulation package and application software."



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HP's strategy is to address  
PC-UNIX integration requirements  
with referenceable  
third-party solutions.

third-party solutions, such as Novell NetWare and LAN Manager, and other products that support NFS (Network File System) and AppleShare connectivity.

Integrating NFS and ARPA services is still complex, according to Bruce Weiler, HP product manager, NFS and ARPA. "[Because] each customer's environment is unique, it's essential to provide interoperability in a mixed server environment.

"The greatest challenge is that the UNIX environment is missing the robust systems management tools that people are

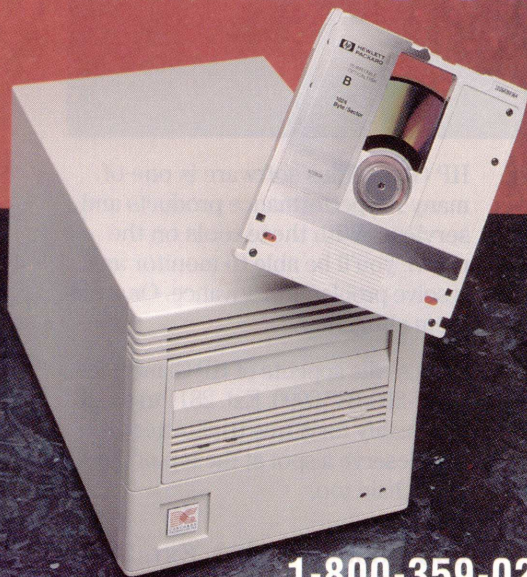
demanding today," says Alan Paller, director of open systems at Computer Associates (Islandia, NY). He says that as organizations rely on servers to run their businesses, they require the same level of functionality, reliability, and robustness to which they were accustomed on the mainframe.

Computer Associates has addressed this requirement with CA-UNICENTER, a suite of systems management tools that incorporates helpdesk, scheduling, backup and security for the UNIX platform. Available for the HP 9000 running HP-UX, CA-UNICENTER addresses key UNIX systems management issues including: ensuring data security, managing data on disks and tapes, managing the workload, managing printing, managing report distribution, accounting for system usage, managing problems and helping users, console management and performance monitoring.

### Can PC LANs Really Talk UNIX?

**B**ECAUSE OF DEFAULT HARDWARE settings, the biggest challenge is to install the Ethernet or Token Ring card into the PC," explains Alan Merrihew, systems engineer at networking software vendor Walker, Richer & Quinn (WRQ; Seattle, WA). He emphasized that protocol stacks

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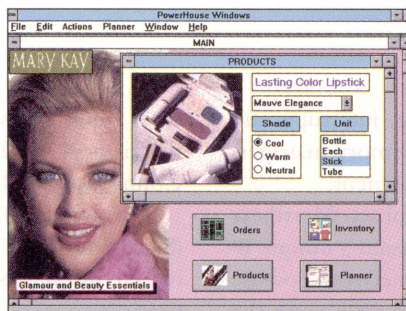
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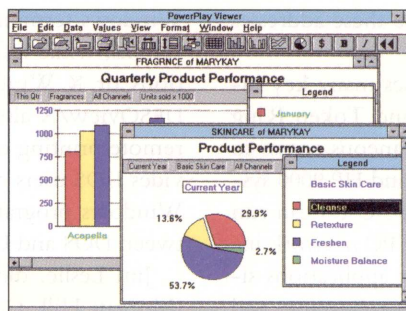
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**Protocol stacks must interface properly with the cards chosen, interrupts and I/O addresses must be chosen properly, and memory managers must be compatible with the rest of the environment.**

must interface properly with the cards chosen, interrupts and I/O addresses must be chosen properly, and memory managers must be compatible with the rest of the environment.

For environments using the TCP/IP protocol set, Merrihew recommends that administrators take care to assign a unique IP address number to each computer node in the network because accidental assignment of duplicate IP addresses will cause the network to malfunction in unpredictable ways. Once the problems are observed, they can be difficult to diagnose. He also advises administrators to carefully observe the rule not to use 0 or 255 as the last field in an IP address, because these addresses are used for broadcasts and loopback testing.

WRQ's Reflection Network Series addresses many key integration issues, and supports both Ethernet and Token Ring networks. This software gives PC users simultaneous access to LANs and host computers, including HP 3000 and HP 9000 systems, and also checks for duplicate IP addresses. Users can run multiple protocols concurrently with only one PC network interface card, work on host sessions and server applications simultaneously, switch between sessions without rebooting, and run multiple sessions to one host or to multiple hosts. In an HP network environment, this software solution works with WRQ's terminal emulation package to deliver accurate text and graphics emulation of HP terminals.

The Reflection Network Series consists of several products, including: Telnet Connection, NS Connection and the 3000 Connection. The Telnet Connection allows PC users simultaneous access to TCP/IP hosts, using a third-party TCP/IP stack and LAN services. NS Connection provides PC LAN-to-host connectivity for the HP 3000 environment, delivering virtual connections to HP Network Services and eliminating the need for a gateway or DTC. The 3000 Connection allows a PC, configured with a single network interface card, to run simultaneously multiple sessions with multiple hosts, using LAT (Local Area Transport), Telnet, TCP/IP, NS/VT (Network Services/Virtual Terminal) and IPX (Internetwork Packet Exchange) protocols.

Scheduled to ship this summer is WRQ's Reflection X, which will allow Microsoft PC Windows users to gain access

to X applications running on any host on the network. Reflection X will be bundled with the company's TCP Connection for TCP/IP support.

Meanwhile, DESQview/X from Quarterdeck Office Systems (Santa Monica, CA) enables users in enterprise-wide computing environments to share computing resources without converting to a single, standardized operating system; DOS applications appear on the network as X clients and are available to non-DOS users, while networked DESQview/X machines can use X clients available on UNIX workstations. X Windows terminal users can access DOS and Microsoft applications, while DOS users can access UNIX text-based applications or X Windows workstations and terminals as clients. DESQview/X also provides printer spooling for DOS PCs and remote printing capabilities for X Windows workstations, provides DOS users access to more powerful DOS and Microsoft Windows programs, and provides file transfer capabilities between DOS and UNIX or other DOS machines on a network.

Jim Leslie, director of marketing at Puzzle Systems Corp. (Morgan Hill, CA) points to different protocol usage on PCs

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and UNIX workstations as a key problem today. UNIX workstations generally use TCP/IP as an Ethernet transport, while PCs most often use Novell IPX.

Puzzle Systems offers two products to facilitate UNIX and NetWare interoperability. SoftNet Utilities allows UNIX platforms to emulate Novell NetWare 2.2 and 3.11 servers to PC NetWare clients. SoftNet Client provides NetWare client emulation. Both packages are supported on HP 9000 (Series 800 and 900): HP-UX 8.02 and later (Series 800), HP-UX 8.07 and later (Series 700), and support the MOTIF/VUE windowing environment. They do not require disk partitioning or UNIX kernel reconfiguration, nor are additional Ethernet ports needed on either the UNIX host or the NetWare servers.

SoftNet Client allows UNIX workstations to directly log on, mount and access Novell file servers as a NetWare client. UNIX workstations can access the resident files and fully utilize the NetWare printers and other resources. NFS support is not required on the NetWare servers.

SoftNet Utilities provides common file access by both NetWare and UNIX users, with bidirectional printer sharing. PC NetWare clients can access directly UNIX printers and directories and NetWare file and print resources, and also conduct remote terminal sessions to all UNIX hosts. UNIX users

can share UNIX files and directories with DOS NetWare users and send their print jobs to NetWare printers. The NetWare client simply loads IPX and NetX (or Net3, etc.) and simply "attaches" and "maps" the UNIX directories and printers as on a standard NetWare server in order to access PC-based NetWare servers and UNIX-based platforms or to conduct terminal sessions to the UNIX hosts. Because the UNIX host appears as a NetWare server only to PC NetWare clients and other NetWare servers, the UNIX host can continue to perform native UNIX-TCP/IP capabilities whether or not the SoftNet Utilities application is running. PC-NFS is not required for UNIX file access.

SoftNet Utilities includes an IPX-based DOS terminal emulator, which eliminates the need to switch between TCP/IP and IPX. The company claims that SoftNet Utilities provides significantly higher performance at one-third of the cost of NetWare for UNIX (a.k.a Portable NetWare), costs 65 percent to 75 percent less per connection than other NetWare for UNIX implementations, and can be installed in minutes. —*Paula Jacobs is a marketing consultant and writer based in Framingham, Massachusetts. She can be reached at [pjacobs@world.std.com](mailto:pjacobs@world.std.com).*

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# TERM Limits

"Insourcing" — The Latest Byproduct Of  
The Re-Engineering Jargon Virus — Could Liberate  
Your Finance Department From Exorbitant  
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Giving something a name can lend it a legitimacy that mere existence alone cannot equal. Take "insourcing," for instance. If you've never heard of the term, don't feel left out. Few people outside of those business process re-engineering gurus whose opinions fill columns of the computer industry trade press have. The word is freshly minted, barely out of the lexicographer's foundry. In many phone calls during research for this article, the typical response to inquiries about "insourcing" was an intellectual "Huh?"

In fact, the idea of insourcing is not new, just the name is. The term, minted by imaginative software marketers, refers to companies taking applications formerly outsourced to service bureaus and yanking them back inside to save time, money or both. Outsourcing is thriving, by the way, but not for all firms under all circumstances. Some companies bucking the tide of conventional wisdom to bring payroll or human resources applications in-house are finding that this unconventional strategy makes good economic sense.

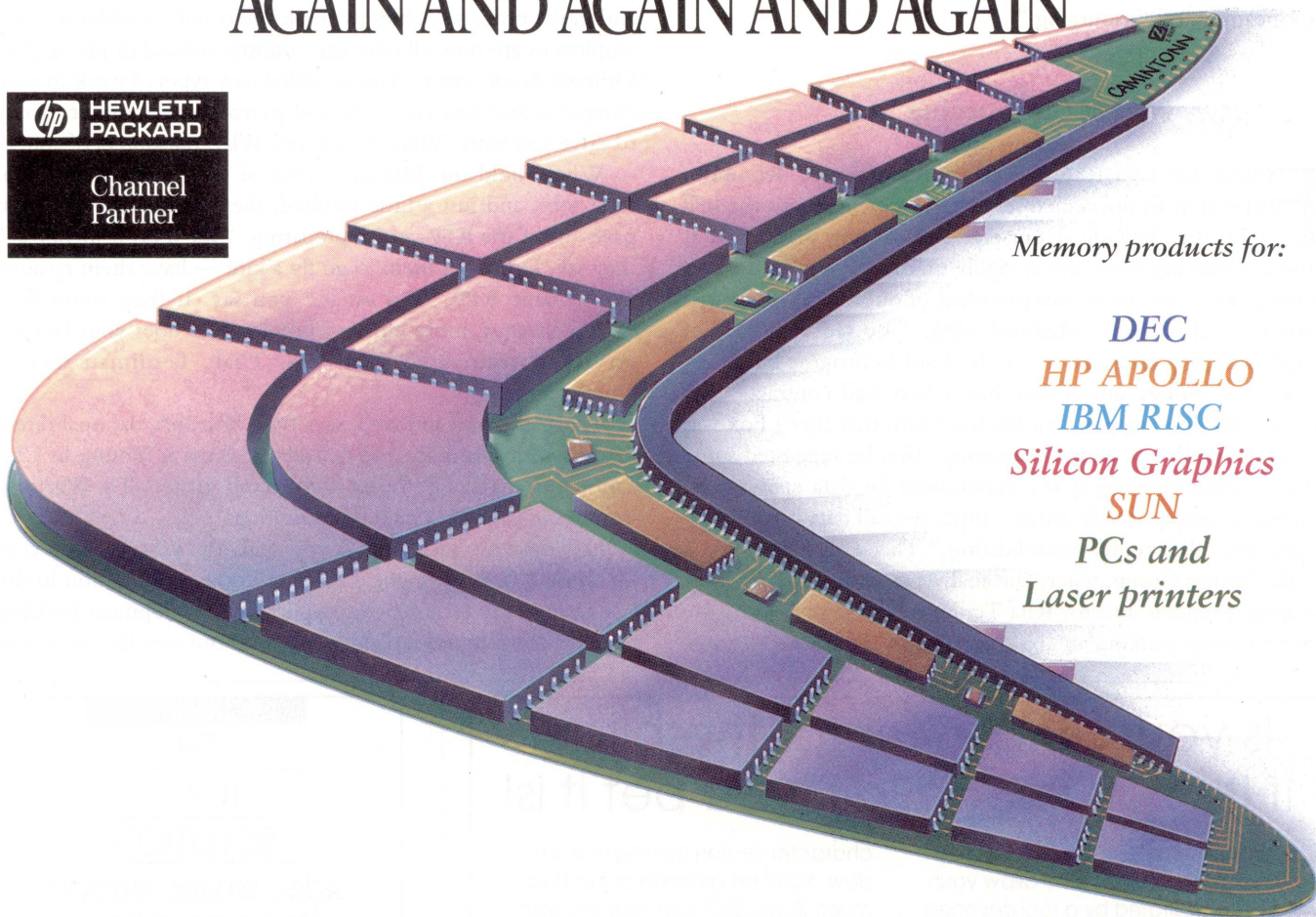
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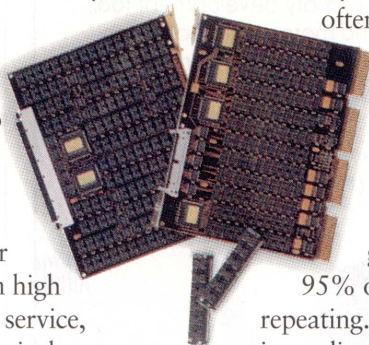
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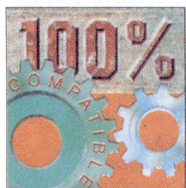
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actually using it in print, it seems unavoidable here. So in order to slide past this necessary evil quickly, let's define the various meanings of "insourcing."

### What "Insourcing" Is

**F**IRST, OF COURSE, IS THE aforementioned definition, in which an unsatisfied service bureau client says the hell with this, let's do it ourselves! According to officials at most outsourcing firms, this is highly unusual. For instance, says James L. Fox, executive vice president of outsourcer Integrated Systems Technologies (Medford, MA), "We see very little of people bringing things in-house. It's hard to imagine how they could save money unless they had a very bad contract." (Of course, this does happen, but we'll get into that later.) Fox was so perplexed by the term "insourcing" that he suggested some people might be using it as a euphemism for data center consolidation. Just to clarify things a little, we call data center consolidation, "data center consolidation." That's not insourcing.

At Gartner Group, where the analysts are experts on this sort of thing, program director Rita Terdiman says people using the term to mean yanking an application away from a service bu-

reau are all wet. Terdiman says "insourcing" implies a competitive bid process. Say your company merges with another, and in the process doubles its employee count. In addition, your employees are now all over the country, instead of just at your Oshkosh headquarters. You've added new types of work to your company, and you know tax and payroll regulations are going to drive you batty. What do you do? Why, outsource, of course.

Whoa, hold on. MIS gets wind of your plans. Fearful for their jobs, and just a little insulted, they tell you to take your paws off of the RFP you're preparing. "We'll do it in-house," they say. Don't tell them to go fly a kite — have them respond to the same RFP. "Bid on it," you say. If they come back with a cheaper, more efficient process than does your favorite service bureau, give it to MIS. That, Terdiman says, is "insourcing."

That's all good and well, says Dale Wartluft, national director of system planning and delivery at Ernst & Young in Chicago, but that's not really insourcing either. To Wartluft, insourcing is, well, a kind of consulting.

Let's say you're not so happy with the efficiency of your in-house MIS department. Like every other corporation in this country, you're experiencing application development backlogs that just seem to get longer every year. But you feel your MIS

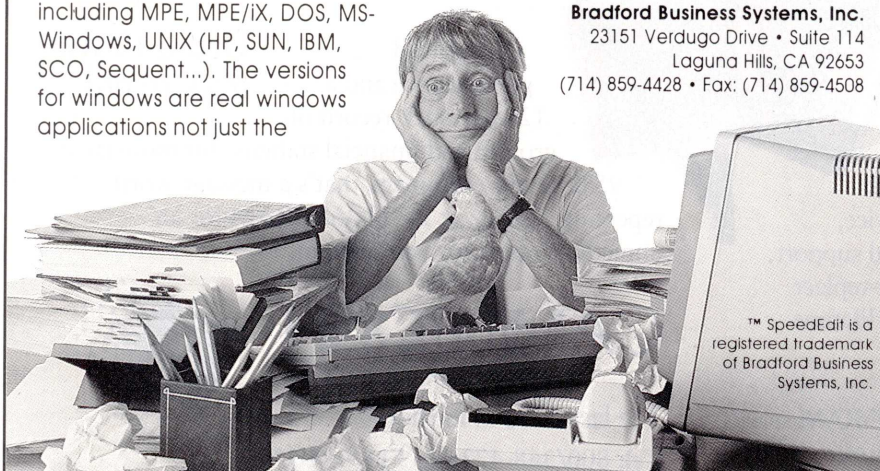
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staff knows its stuff — and besides, they're a bunch of nice guys. The last thing you want to do is outsource and lose all of their valuable expertise, but you've got to do something about productivity because the CEO is breathing down your neck. (Dorothy, you're not in Kansas any more. Your new address reads: Between-A-Rock-And-A-Hard-Place, USA.)

If you're in Wartluft's camp, you bring in consultants from places like Ernst & Young. These savvy consultants teach you and your MIS staff the newest technologies, IS project management skills and other DP disciplines, turn MIS into the efficient machine you need, re-engineer your in-house systems, and then scam. Wartluft has seen this kind of "insourcing" used as an alternative to outsourcing for five years or so.

The point, of course, is that there are numerous ways to avoid outsourcing, which at heart is what insourcing is all about. (So is there any difference between doing your own computing and insourcing? Kinda. If you've always accomplished everything in-house and you wouldn't go near an outsourcing firm with a 100-foot pole, then you're not insourcing. If, on the other hand, you've had a close relationship with an outsourcer, or at least flirted with the idea, and *not* gone outside, then you're insourcing. Hmmm.)

## Take Back Your Data Center

ONLY A FEW YEARS ago, the big question in MIS departments was "why outsource?" With outsourcing as firmly entrenched as it is — and growing — the question now is "why insource?" The answer, says Gartner's Terdiman, is that contrary to popular opinion, it is "not a no-

*With outsourcing*

*as firmly entrenched*

*as it is — and growing —*

*the question now is*

*"why insource?"*

brainer that outsourcing is cheaper." Outsourcing is only cheaper when the outsourcing firm has economies of scale that you need, she says. For instance, many companies have traditionally taken high-volume transactions out of house in order to access mainframe resources without leasing or buying big iron themselves. However, as we all know, many applications that used to be impossible without a mainframe can now be performed, cheaply, on UNIX midrange systems like the HP 9000, possibly in client-server configurations that add convenience to your organization.

Theoretically, much financial software is now so user-friendly that you can bring payroll, HR and other accounting applications in-house without adding staff. Weyburn-Bartel Inc., a camshaft manufacturer in Grand Haven, MI, some years ago

## WHETHER INSOURCING OR OUTSOURCING: LOOK BEFORE YOU LEAP

Not only is it practically impossible to break a contract with an outsourcing firm, it's not exactly fun, either. That's why the time to consider insourcing is, naturally, before you go out of house. Here's a little free advice.

First, says consultant Mitch Kleiman, set goals. Are you trying to save MIS costs, operational costs, time, or all three? Second, he adds, involve users. "You need buy-off from users to make any change," he says. Third: Do a cost-benefit analysis before you do anything.

Kleiman recommends comparing two years of outsourcing costs (cost per transaction x number of transactions x annual fee, including contracted fee hikes, for two years) with two years of insourcing costs. To calculate insourcing costs, count hardware, software and maintenance costs, including annual maintenance fee hikes. (If you can't get those from the hardware and software vendors you're considering, add a percentage to today's maintenance rate based on the annual inflation rate.) Add conversion costs from

your current system. In many cases, the financial software vendor will supply a "turnkey" conversion from other solutions. Include some miscellaneous costs for forms and other supplies. If you won't have to add employees to bring the solution in-house, you're all set. However, if you have to hire new employees or pay extra for training, calculate those costs as well. If planned growth will affect the application, include the cost of extra systems, software and staff.

Don't neglect intangibles: Are necessary new employees with the right skills available? Can your organization handle the learning curve? How much control do you need over the application? Can you deal with changes in tax code and other regulations? Is security an issue?

Whatever you call it, the decision to keep applications in-house or send them away is complicated and likely to become more so. Think twice before you take anyone's advice as gospel — even ours.



outsourced payroll and human resources applications to service bureau ADP. Surprisingly, outsourcing "saved neither money nor time," says payroll clerk Tracy Siemion.

Recently, Weyburn-Bartel pulled the applications back from ADP, implementing them instead on payroll and HR software from Sotas International, a Haverhill, MA accounting software vendor. Not only did Weyburn-Bartel insource without increasing staff, says Siemion, but now company executives are hoping to cut staff as a result. Moreover, the company's lean staff completes the payroll more quickly and with fewer errors than did ADP, she says. Siemion expects the new in-house system to pay for itself in two to three years.

Sometimes insourcing allows you to reduce operational costs, which can save you more than reducing MIS costs by outsourcing. (Obviously, the best time to either insource or outsource is when doing either will save both MIS and operational costs.) For instance, the speed and accuracy with which work is done is critical in some industries. San Rafael, CA consultant Mitch Kleiman once worked with a financial services firm that arranges partnerships and other syndicates. This company needs immediate, accurate response from its computer systems. But its outsourcer wasn't speedy or reliable. "They were trying to push millions of dollars through these systems and they

could not provide service to their customers," says Kleiman. The company, which now runs its own applications on three networked HP 3000s, today experiences less than 2 percent downtime — a vast improvement in reliability. By the way, insourcing also saved the firm between \$4 million and \$6 million in less than five years.

Kleiman hastens to add that companies shouldn't insource everything. The same company mails millions of statements once a year. Rather than purchasing printers that would lay idle the rest of the year, it outsources that annual nightmare.

As budgets tighten and user organizations get more sophisticated, they force both outsourcing firms and MIS departments to justify costs and prove benefits. In doing so, you'll likely find what Kleiman and others have found — that some applications work better under your own roof — and some don't. It's worth doing cost-benefit analyses to determine where your applications belong. After all, you want to avoid being one of the thousands who, in one analyst's words, are "still downsizing, rightsizing — or capsizing."

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# ADVENTURES IN THE MEMORY TRADE

*Improved Product Reliability, Lower-Manufacturing Costs And Intense Competition Add Up To A Long-Term Buyer's Market For Third-Party Memory — Despite Last Year's Short-Term Troubles*

**BY MICHAEL J. MAJOR**

**P**rior to October 1992, one-third of the memory chips for sale in the U.S. were manufactured in Korea. That was before the U.S. Commerce Department found Korean manufacturers guilty of dumping DRAM chips on the U.S. market — at artificially low prices — and threatened to impose punitive import tariffs, potentially as high as \$.87 on the dollar, on Korean-made chips. The actual duties the Commerce Department imposed were much lower: Hyundai received the largest penalty of \$.07 on the dollar and Samsung Electronics the smallest at less than 1 percent. But the prospect of a rapid rise in Korean memory prices was enough to throw the entire market into turmoil.

As third-party memory vendors braced themselves for DRAM price increases and possible shortages, the cost of add-in memory boards for consumers began to rise. For much of this year, the challenge for third-party vendors has been to keep their prices relatively stable while weaning themselves off unstable Korean manufacturers in favor of somewhat more expensive U.S. and Japanese chip suppliers.





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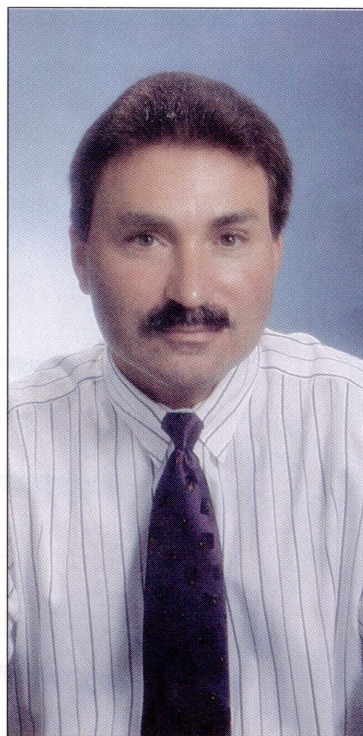
With chip supplies lower than normal, demand running higher than ever before and the threat of higher tariffs looming large, it's been a frustrating, topsy-turvy year in the memory trade. Fortunately, most industry watchers believe the worst is almost over — at least from the buyer's perspective.

John Sutherland, manager of the workstation product group at Kingston Technology (Fountain Valley, CA), says his company has seen the effects of the Korean supply crisis throughout the marketplace. "We saw problems of the availability of memory having to do with the dumping incidents," says Sutherland. The instability, he notes, led "some vendors to charge outrageous prices, while others aren't able to get product at any price." His own company, Sutherland says, worked hard to keep its prices stable.

When asked about the DRAM market's current state, vice president of manufacturing at Dataram Corp. (Princeton, NJ) Luis Don says, "DRAM prices now are slowly decreasing — although market conditions in general have not changed much since the Commerce Department ruling. Prices probably will continue their slow decline and return to pre-October '92 levels by the end of the year."

### Cutthroat Competition

**T**HE BOTTOM LINE for memory prices always has been governed by the simple law of supply and demand. During the Korean tariff scare, a limited supply of affordable chips — or at least the threat of a limited supply — caused prices to rise. But if the Korean dumping incident was



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**Len Herbstman,**  
Marketing Director,  
Camintonn Corp.

only a temporary anomaly, last year's surplus DRAM supplies will return and bring with them a return to highly competitive third-party pricing.

Memory market price competition has become cutthroat in recent years because of the multitude of vendors — and the

### AGOMTA — A GLOSSARY OF MEMORY TECHNOLOGY ACRONYMS

The many memory technologies available today have generated their share of acronyms. As some of these technologies have come into widespread use (DRAM, ROM), their acronyms have been accepted as functional nouns and adjectives in mainstream computer jargon. But others remain relatively obscure. For those who've ever wondered what all these acronyms mean and how these many kinds of memory differ from each other, we offer the following glossary:

**DRAM — Dynamic Random Access Memory:** The highest-density, lowest-cost-per-bit solid state memory technology. Two-dimensionally addressed, it can be both read and written. DRAM is the predominant computer memory technology in use today.

**SRAM — Static Random Access Memory:** The fastest of the solid-state memory technologies. One-dimensionally addressed SRAM is another kind of read/write memory, but it's available in lower densities. It's also much more expensive than DRAM, and typically isn't used in semiconductor mass storage memory.

**ROM — Read-Only Memory:** A one-dimensionally addressed memory, which as its name implies, can only be read. Typically used

for dedicated "firmware" programs, such as the IBM PC BIOS, it's programmed by the manufacturer.

**PROM — Programmable Read-Only Memory:** Another one-dimensionally addressed memory, it's a field-programmable variation of ROM. It is a one-time programmable part programmed by the customer.

**UVEPROM — Ultra Violet Eraseable Programmable Read-Only Memory:** Another variation of the field-programmable ROM, it can be erased by exposure to high-intensity ultra violet light.

**EEPROM — Electronically Erasable Programmable Read-Only Memory:** A cross between UVEPROM and SRAM, it's a read/write part, programmed by the customer either inside or outside of the end-product system.

**FRAM — Ferro-Electric Random Access Memory:** A fairly new technology, it's a read/write part similar to SRAM offering higher density. It costs more than DRAM so it's not very common in semiconductor mass storage memory. — Hans Schmitz, development engineer, Dataram Corp., Princeton, NJ.





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rising number of customers who buy memory on a strictly cost-per-megabyte basis. Years ago there were only four or five third-party memory suppliers in the HP market — now there are well more than a dozen. Vendors have crowded into the market thanks to Hewlett-Packard's recent success with workstation sales and the ever increasing memory requirements for workstation applications. Also, with HP striving to keep its workstation prices low, new systems tend to ship with minimal memory installed. And that means more demand for add-in memory on the desktop.

Steve Mitchell, vice president of sales for memory manufacturer Data 1 (Holiday, FL) is encouraged about the growth potential of the HP third-party memory market. "As long as HP continues to design systems, and while there are software developers designing intense applications, such as GUIs, we'll be ready to meet the demand."

The need for memory is on the rise among those users who choose stay with legacy systems, as well, and this has attracted still more vendors to the HP market. To increase the capacity of existing machines or stay with HP 1000 systems (as opposed to converting their real-time systems to UNIX or HP-RT with the corresponding expense and training factors), observes Randy Elliott, sales manager for Herstal Automation Ltd. (Berkley,

MI), many customers turn to low-cost third-party memory. Herstal, which specializes in memory for the HP 1000, has discovered an emerging market in supplying memory for an aging system.

## Where Do Your Loyalties Lie?

THE RAPID INCREASE in workstation users' memory needs, coupled with the industry's ongoing emphasis on cutting costs and preserving legacy systems — not to mention a marketplace crowded with too many vendors — all mean more downward pressure on prices. And for many memory buyers, price is nearly everything. "Price is far and away the first consideration customers have, followed by quality and then support — in that order," notes Michael Sly, design engineer for Newport Digital, (Tustin, CA). "The situation has changed. It wasn't always that way."

What does this do to customer loyalty? In terms of third-party vendors, Vincent Sandoval, director of marketing for Martech (Alhambra, CA), says, "There's some loyalty, but not nearly as much as before. With so many players, people are shopping much more than ever before."

## YOU BETTER SHOP AROUND: USER PERSPECTIVES

Our conversations with three users appear to confirm the overall impression that memory has become a commodity, that the many vendors are offering a high degree of reliability, so that the main purchasing criterion has become price.

"The amount of memory we are using is increasing significantly," says Abu Zubair, president of Zubair Interfaces Inc. (Lakewood, CA). "Before our memory needs were small, now they are very large. The workstation market, especially UNIX, requires very high amounts of memory. New releases often double the amount needed."

Zubair says that price is probably the most important factor in his purchasing decisions. "I think people are shopping around more now," he says. "I know, because I'm one of them. I look at different vendors and see which one has the best pricing." Zubair says there is some loyalty in that he often purchases from Texas ISA, but that relates to the fact that this company also consistently offers good pricing.

"HP costs a lot, and the third-party memory is significantly cheaper," Zubair says. "But most of the memory boards are clones of HP boards. There's not a whole lot of variation. Vendors have to be competitive; the service and warranties are pretty much the same."

Aaron Hicks, engineering technician, Intel Corp. (Santa Clara, CA), tells a similar story. "Our memory needs are increasing," he says. "Every time HP comes out with a new upgrade for UNIX, more memory is required."

Hicks says, "For me, memory seems pretty generic. You can't

have too many bells and whistles on a piece of memory. It's pretty much memory or it's not. And most vendors seem to be running the same in terms of warranties and overnight deliveries. I go to whomever has the best prices, but I find I deal with Martech a lot. They've been just great to me, and their prices are competitive."

Don Sheets, manager, business computer operations for Lockheed Space Operations Inc. (Titusville, FL), says, "What we've found is that the performance on HP systems always have been dictated on the amount of memory, the more memory the better the performance. Because more and more of the system is dependent on memory, the reliability of memory is very important."

Sheets says his philosophy has always been "staying as clean as possible by sticking with HP products. We've always felt that by not mixing other vendors in, we reduce our problems as much as possible." But Sheets says a big exception he's made to this philosophy is in terms of memory, which he's purchased from Kelly Computer Systems.

Reliability has not been an issue, Sheets says. If it was, he says, he would be willing to pay more. But the fact was that he found at the time that Kelly offered memory "at a 50 percent lower price, which amounted to significant dollars."

Sheets adds, "We went through a six-month evaluation period before we decided to purchase outside of HP, but, with our third-party memory products, we've found excellent reliability."



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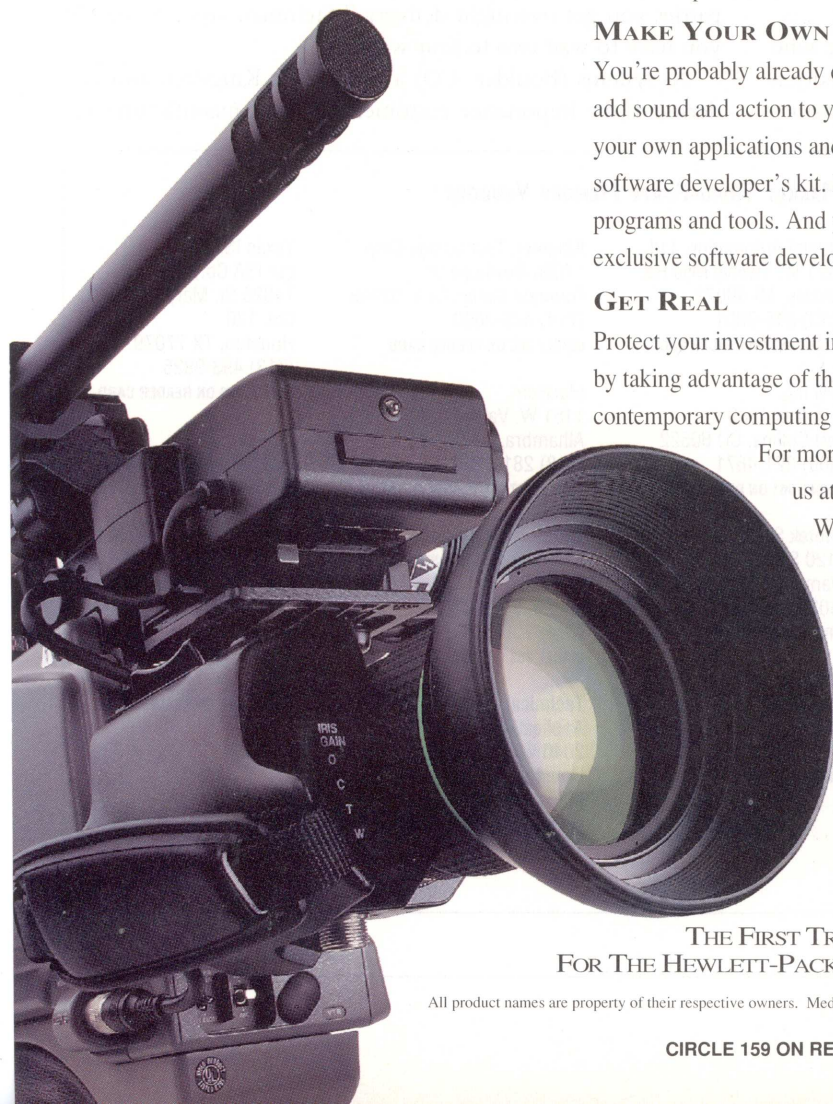
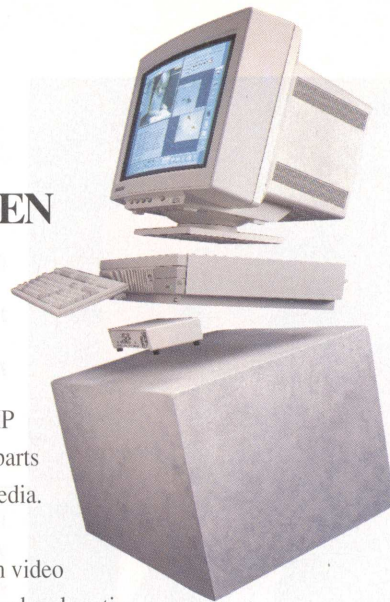
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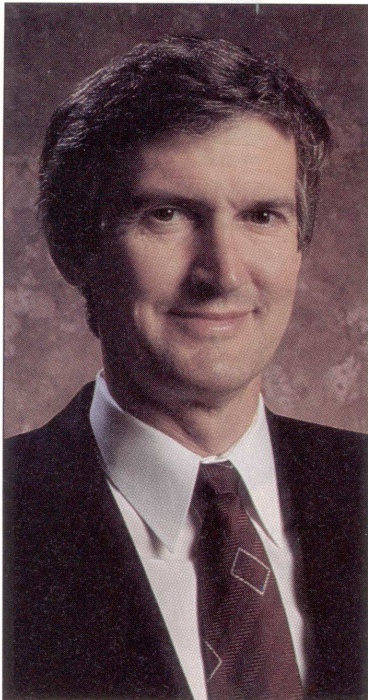


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**Mike Sullivan,  
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There is, however, another type of customer, the one who is satisfied only with HP gear. This customer's brand loyalty is reinforced by HP's general reluctance to guarantee maintenance

on any non-HP product. Moreover, HP loyalty is, in some respects, growing, says Steve Galster, director of HP marketing for Falcon Systems Inc. (Sacramento, CA). "In the past, HP memory has been priced out of proportion, but, with its new systems, memory is priced much closer to value. So it's easier for the user to take HP memory along with the service and support that goes with it."

Doug Gibson, product line manager of HP 9000 series for Hewlett-Packard, agrees that more reasonable pricing is HP's latest memory marketing strategy. "We offer the entire HP solution all wrapped up in a single bow," says Gibson. He adds, however, that price is a much more significant part of this package than it was in the past. "We recognize that we have to remain competitive to stay in business," Gibson says. "As the memory prices have collapsed, our own memory has been on a substantial downward track. Not long ago HP memory was sitting at \$1,000 per MB, and now it's \$100 a MB. There always will be someone somewhere who can undercut us on price, but we're counting on the extensive added value we can bring."

But third-party vendors also are counting on the value they can bring to keep their customers loyal. Steven Steinman, senior vice president of Technical and Scientific Applications Inc. (Houston, TX), points out that virtually all third-party vendors now offer lifetime guarantees, which HP does not. "From third parties you get overnight delivery," Steinman says. "From HP you have to wait two to four weeks."

X-Systems (Boulder, CO) a reseller for Kingston, also understands the importance customers place on manufacturer re-

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liability and benefits from prompt part replacement policy. X-Systems, like most third-party memory vendors, now is able to service customers with a 24-hour exchange. "For those willing to pay a little extra for system and memory expertise and support when a problem occurs, our role in prompt replacement of defective kits is crucial," says Warren Frebel, president of X-Systems.

### What Makes Memory Memorable?

**T**HIRD-PARTY VENDORS are also striving to differentiate themselves from each other as well as from HP. For instance, Len Herbstman, director of marketing at Camintonn/Z-RAM (Irving, CA), speaks of his products' "cleansing mechanism, and burn-in and live system testing to increase longevity."

Datsys (Dallas, TX), which carries a line of memory products for the HP 3000 and 9000 systems, including the Corporate Business Systems (or "Emerald" systems), offers MB-for-MB trade-in credit for your existing memory when you upgrade to any of its memory products.

Others, such as Kelly Computer Systems (Mountain View,

CA), bundle in specialized software to augment its memory products. Mike Sullivan, vice president of sales at Kelly, points to his company's Overlord software "that provides control over who uses system memory and system resources and in what percentage, and also identifies the source of performance problems."

Several vendors, including IEM (Boulder, CO), Artecon (Carlsbad, CA), Concorde Technologies (San Diego, CA), Texas ISA (Houston, TX) present their memory products as part of a larger array of peripherals and add-in products. These companies offer a range of disk and tape drives, mass storage devices and other workstation and system peripherals to offer customers the benefits of one-stop-shopping.

Still other companies promote their multiplatform support and networking capabilities. In this regard, Daniel Carson, product manager for Dataram Corp., says, "It used to be that you'd go into a facility and find only HP or DEC or Sun or IBM equipment. But within the past year the odds have increased that you'll find any particular facility has a combination of these machines. Not many vendors have the breadth and depth of products to relate all these different types of memory together."

One popular current trend, says Jim Cope, regional manager at Infotek Systems, (Klamath Falls, OR), "is the movement from the 4-Megabit DRAM to 16-Megabit DRAM, allowing for

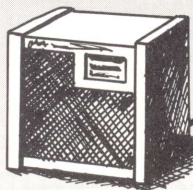
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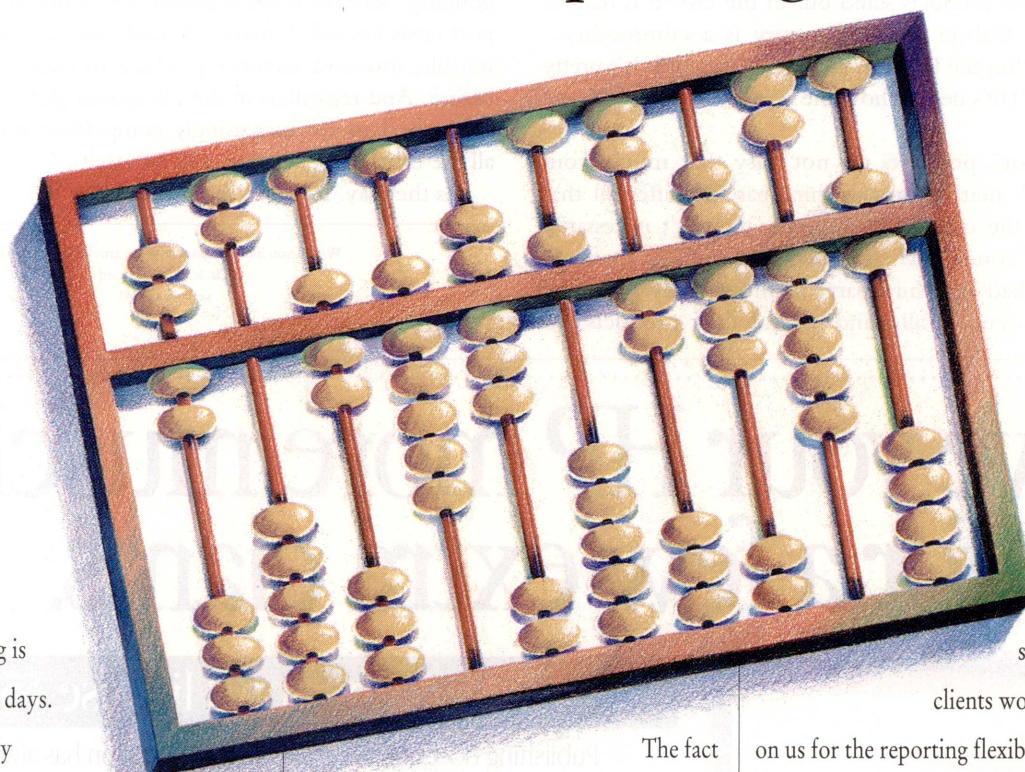
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up to 128 modules." What this accomplishes, adds James Dunham, sales manager for Concorde Technologies (San Diego, CA), "is a greater density in a smaller pack, and that appeals to customers." But HP's Gibson acknowledges that this leap in memory capacity is merely the current trend, which means that HP and other third-party vendors also will follow suit before too long.

### Which Brings Us Back To Dough

**T**HE ONE PROBLEM all the vendors have in trying to make their products stand out in the crowd is that, as Falcon's Galster says, "Memory is a commodity." Galster adds that "on the HP side, the stuff is standard. It's pretty easy to figure out HP's design, how the boards are routed. There are no tricks."

If HP's memory products do not vary that much from the third parties', neither do the third parties' differ all that much one from the other. For the user, this isn't necessarily a bad thing, of course. As Steinman notes, "HP memory rarely ever goes bad and third-party memory rarely goes bad, and the reliable vendors all stand behind their products. So

my feeling is why spend extra money to buy the same reliable product?"

Which brings the issue right back down to price. The bottom line on memory is still the bottom line.

John Larmie, technical engineer at Texas ISA, says, "Our goal has been to bring fair pricing to memory boards. At one time, the costing practices were quite unreasonable. For instance, we introduced a memory product at \$6,000 when others were selling at \$16,000 to \$20,000, and now our product is down to \$3,000. We think it's very unfair to take advantage of a customer's ignorance to gouge him."

But, then, in this competitive business, any thoughts of "price gouging" have long since passed. Once this year's Korean import crisis has faded, users will find they have a wider range of reliable, low-cost memory products to choose from than ever before. And regardless of the HP system platform you use, you can expect to see increasingly competitive pricing both from all the third-party vendors and HP itself.

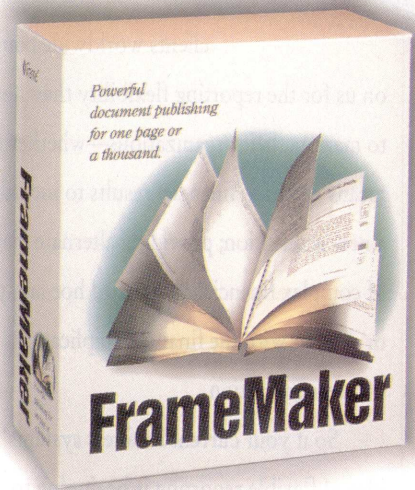
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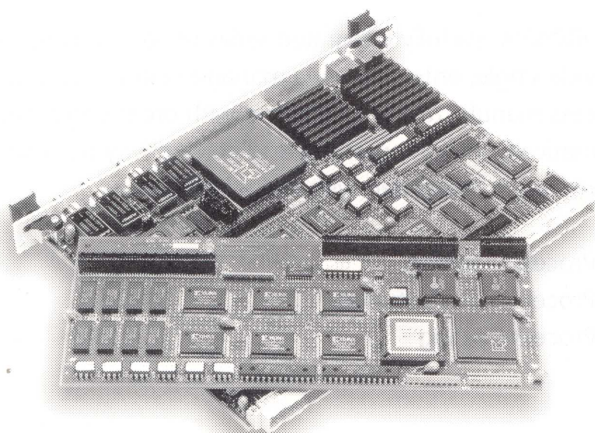
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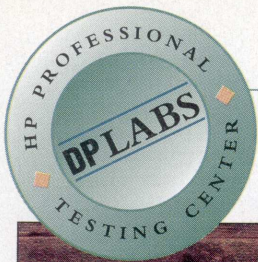
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- Provides an extensive C library on which the designer may draw.
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### PLATFORM:

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## Vermont Views From Vermont Creative Software Builds Graphical User Interfaces With Flair

**Y**ou can't escape a trip through New England without admiring its mountain ranges and scenic landscapes. Vermont Creative Software (VCS; Richford, VT) has given us its own "Vermont Views" — its Vermont Views User Interface Development System (Version 3.0). Vermont Views is made up of an interactive screen designer, a generator that creates prototype code for the screens you build, and a C library for further development of your GUI. In addition, Vermont Views gives you the option of developing your GUI entirely in C code.

There are several dozen features in Vermont Views all of which impressed us. In this review, we'll mention: scrollable regions on the data entry forms you create; event handling and processing (in simple terms, the relation to the appropriate C code of all the mouse-, pointer- and keyboard-related activities a user might carry out); efficient use of memory (through the allocation of larger-than-usual blocks); portability (from or to any of the supported operating systems: PC/DOS, OS/2, VMS, UNIX and XENIX; compatibility with not only X-based window managers but also Microsoft Windows, and a thorough, context-sensitive Help feature.

We'd like to say that installing Vermont Views on our HP 9000/425 was simplicity itself — but that wasn't quite the case. Transferring the development tool's many files from the QIC distribution tape to our workstation was no problem. Nor was it a great hassle to set the

**Michele Petrovsky**



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several Vermont Views-specific environment variables required. But our attempts to build (that is, compile and link by means of the shell scripts supplied on the distribution tape) the package's numerous C libraries failed repeatedly.

In each build, we received error messages that said several of the subsidiary scripts (there are more than 20) could not be found. Ultimately, the problem proved to be a rather trivial one. Each "build" script had to be edited so that they would present the full path name (rather than file name only) of each script. Once this bit of explicitness was added, we had our libraries and therefore our GUI-builder, ready to run.

### Forms That Follow Function

Our trip through Vermont began by entering the command **vvd**. This took us to the package's main menu, which among other choices, allows you to: Create a menu/screen; Get (retrieve) a previously worked on menu or screen, and Quit. (Note that even after you've built your screen and the prototype of its underlying C code in Vermont Views, there will still be some manual operations you have to perform.)

The Vermont Views main menu brought us a blank Designer panel, which in turn offered us several submenus, each activated by selecting an item from the menu bar now at the top of our monitor. We had a few uneasy moments when first learning how to activate these various submenus and the functions they contain. But the product documentation helped us out.

In fact, the only flaw we found in VCS' product documentation was a lack of clarity in its discussion of "hot keys." To use these keys, you have to type the first letter of the menu option you want to select. Sounds simple enough, but the application wants you to type the letter in lowercase, while the menu options are all displayed on screen in uppercase. It took a moment to figure out that we needed to type "<ESC> a o", rather than "<ESC> a O", to activate the OBJECTS menu.

After creating a menu form, and supplying a library and form name to that

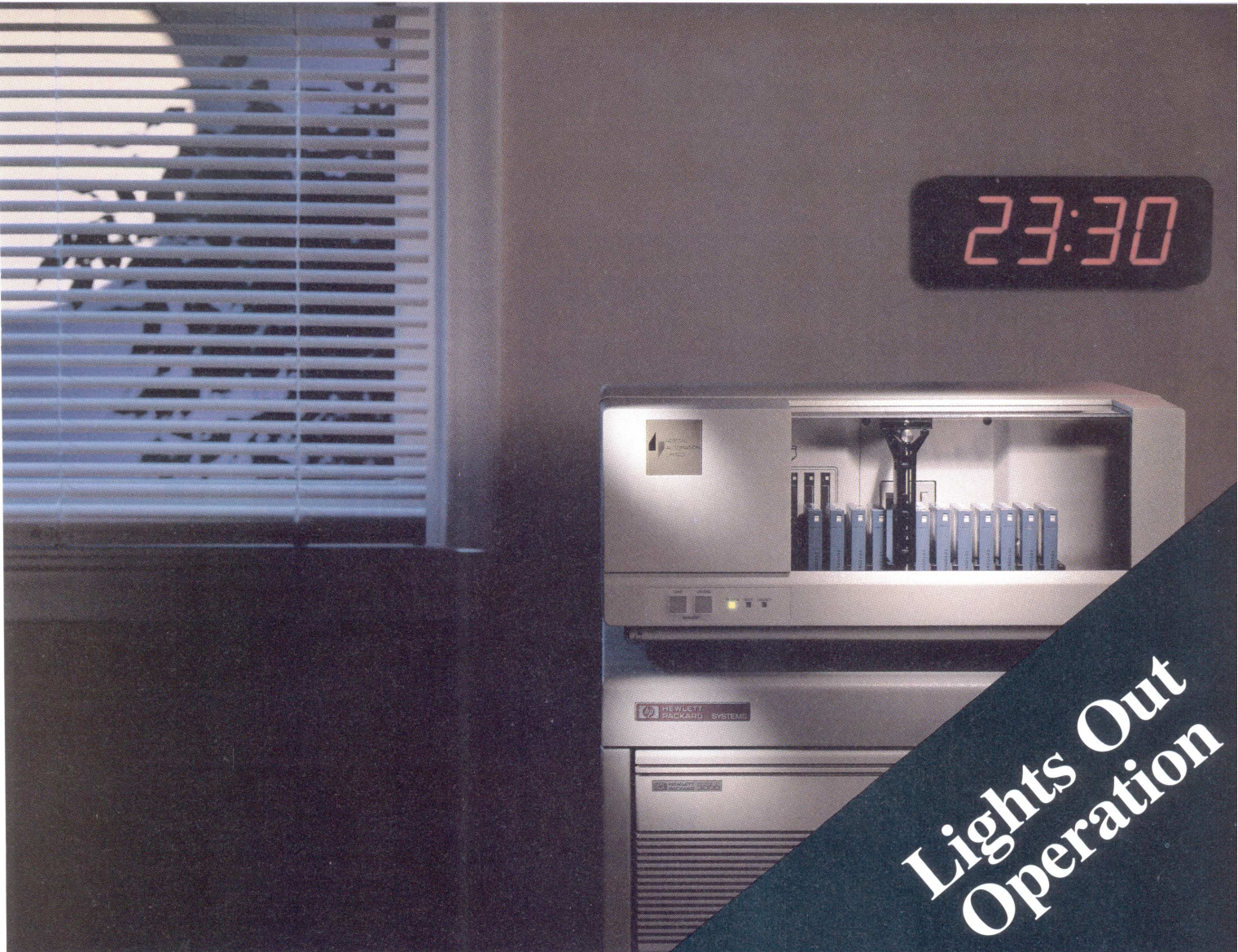
dialog box, we had our blank Designer form complete, and could begin to define fields, add text, etc. In this first form, which was to be the top-level menu of our GUI, we created and defined three fields, one of which was to allow access to a data entry form, another of which was to bring up a secondary menu, and the last of which would allow us to leave the GUI we were building and the application it accessed.

This process of field creation/definition involved: placing the cursor where we wanted fields to appear; activating the FIELD item of the OBJECTS menu; supplying information to the ACTION function (the action to be taken when the field is activated — in this case, it was FORMCALL, one of Vermont Views' three predefined functions for menu fields) and providing the SUB-FORM name (the data entry form, yet to be created, to which one of our fields would transfer processing control) for resulting dialog box — and, of course, we also had to save our work, which is accomplished simply by highlighting the Designer screen's OK button and pressing. Next, we created two more forms, one for data entry and the other a menu — this time for reports. These last two forms were built through the PANEL menu item.

From the INTERFACE menu of the Designer screen, we then created the main program and data structures, these being integral parts of the prototype C code that would actually drive our GUI. That completed our work with the Designer proper. After leaving it, we used the resident C compiler/linker on our 425 to put our new GUI into final form. When we completed this stage, we had a fully functional graphical user interface.

GUI-builders have become more prominent and prevalent; Vermont Views was one of many interface builders we've recently tested. We found that it compared favorably with competitors in overall ease-of-use and speed of execution (even over the VT 100 emulation we were running on our vanilla 286). If you're using a character-based environment and require customized user interfaces, you should take a look at Vermont Views. ■



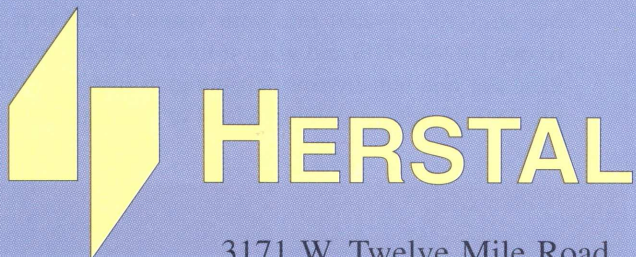


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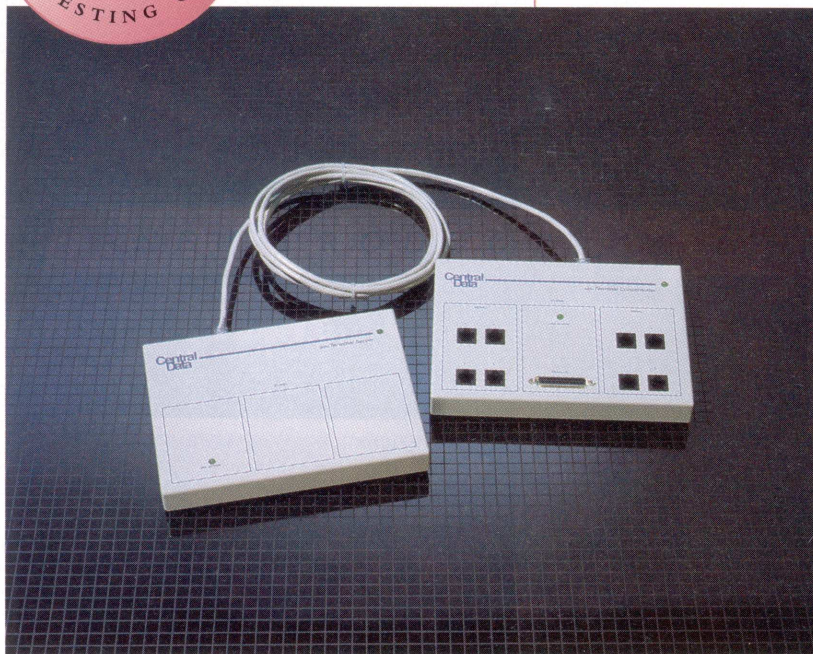
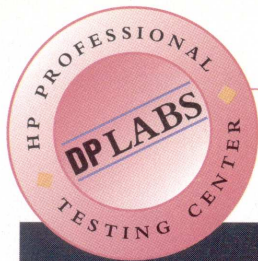
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# Port Authority

## Series 2000 scsiTerminal Servers

### FEATURES:

- Easy product family to understand. The documentation is helpful and clear.
- Allows up to 56 serial and seven parallel connections.
- On-board processors relieve host of serial I/O overhead.

### PRICE:

ST-2001, \$795  
ST-2008plus, \$895

### PLATFORM:

HP 9000/700 or 800 Series systems;  
most major UNIX platforms.

### Central Data

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CIRCLE 311 ON READER CARD

## The Series 2000 scsiTerminal Servers From Central Data Help You Accommodate Expanding User Demands

If there's one thing that's inherent in data processing, it's the "golden opportunity" effect. They told us all about it in graduate school. "The minute you set users loose on a new system," my instructors warned me, "they begin asking the question: 'What else can it do for me?'" In other words, if a host offers seven applications, users will ask for an eighth and ninth. If that host has x number of MB on its hard drive, your users will fill that number up, and you'll need to arrange for more. And if that same host supports a half-dozen terminals, you're guaranteed that a baker's dozen users will try to log on.

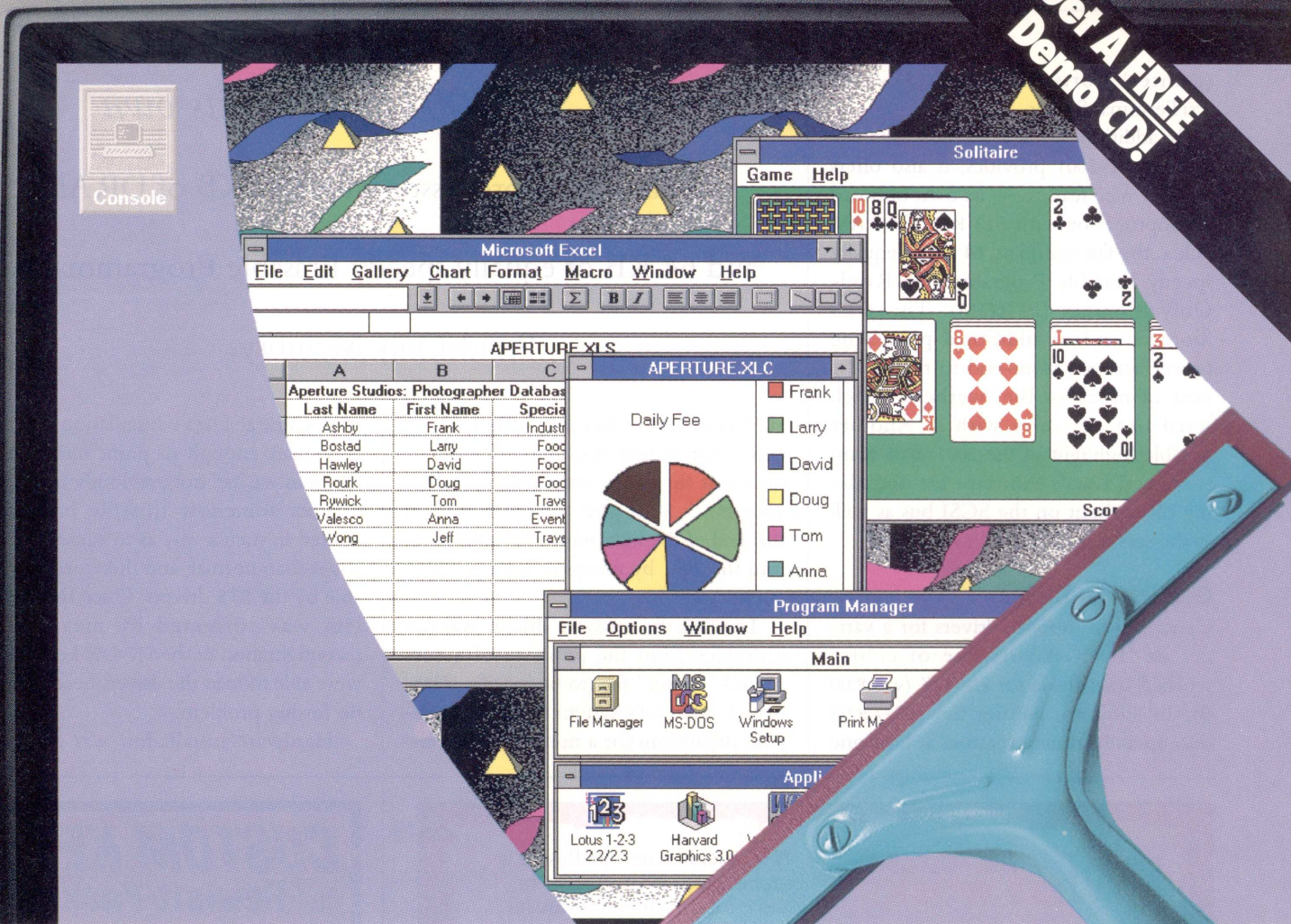
A prime solution for that last problem can be found in a new product, or more correctly, set of products, we recently tested — the Series 2000 scsiTerminal Servers from Central Data of Champaign, Illinois. The set specifically includes the ST-2001 scsiTerminal Server and the ST-2008 scsiTerminal Concentrator.

The 2001/2008 combo provides an easy, efficient, low-cost way to expand the number of peripherals your HP-UX host can support. You can hook the ST-2001 into your system's SCSI port (we connected it to our HP 9000 710) and place it up to 20 feet from the host. You can hang not one but (by daisy-chaining) as many as seven ST-2008s from the 2001, thereby providing a total of 56 serial ports and seven parallel

**Michele Petrovsky**



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(printer) ports from each ST-2001 scsiTerminal Server.

In addition to the expansion capabilities the ST-2001 provides, it also offers another nice feature — its own onboard microprocessor with 512 KB of DRAM (a.k.a. the fast stuff) and 64 KB of equally speedy Erasable Programmable Read-Only Memory (EPROM). This fast-footed blend of additional processing power acts as a front-end to relieve the host of much of the overhead which serial I/O can carry with it. Another notable highlight of the 2001/2008 team is Central Data's firmware for optimizing throughput on the SCSI bus as well as the server/concentrator interface.

### Out Of The Docks

Central Data supplies drivers for a variety of UNIX flavors; we of course worked with those for HP-UX (v.A.8.00 B). In addition, getting the 2001/2008 duo up and running requires at least one

## *The ST-2001 provides its own onboard microprocessor with 512 KB of DRAM and 64 KB of equally speedy Erasable Programmable Read-Only Memory.*

SCSI port, one SCSI cable with a SCSI-2 connector at one end and a SCSI connector at the other end, which matches your host's SCSI port. The 2001 goes at this end of the link, while the 2008 plugs into the 2001 by means of a simple RJ45 connector.

Loading the software drivers was not a problem, but the presence of a corrupted "master" file (to be specific, /etc/master, the UNIX system file which contains definitions for a number of drivers)

was. Central Data's installation routine was smart enough to point out to us a problem we had not previously suspected — that somehow this file had been tainted in such a way as to cause it to be larger than normal, and therefore not usable by the STS drivers. Once this problem was corrected by means of a reconfiguration of the HP-UX kernel, we were able to load the drivers needed with no further problem.

Hardware installation was similarly

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simple. Because we had no other devices installed at our SCSI port, the plug-in was a standalone; there was no need to daisy-chain as is sometimes the case with SCSI devices. Then we had only to set the device ID number on the ST-2001 by setting its ID switch to the value which had been determined during software installation, plug in, and power up. Because installing the software had also involved identifying the server to HP-UX, and since as soon as we powered up, an appropriate LED told us we'd made a successful connection, all that remained was to connect the ST-2008 to its parent device and repeat the ID/power-up phase of the process.

Take note that once you've successfully installed and powered up the ST-2001, you should not power it down without first shutting down your host system. To do otherwise could cause both the firmware and the driver soft-

ware on the ST-2001 to "behave strangely."

### Into The Data Stream

Once we were ready to push off, we used the terminal server/terminal concentrator in an unusual way. We employed it as the "front end" for working with another product, which involved monitoring and parsing the data streams from the consoles of more than one host. The ST-2001/ST-2008 alliance was the linchpin of these tests; it was through it that the consoles of a DEC System 5000 and an HP 9000/834 were connected to our HP 710, so that it could track activity on each of those two systems and report that activity to us.

In its role as "silent partner" to this monitoring application, the ST-2001/ST-2008 performed without a hitch. We considered it a particularly convincing test of the product, since it involved con-

nections between dissimilar hardware platforms and UNIX flavors. If it works this well here, we thought, it cannot fail in simply allowing terminals or workstations access to a host.

### Steady As She Goes

If you, like us, are somewhat intimidated by hardware and therefore reticent to consider the ST-2000 series as a means of enhancing your current configuration, don't be. The product's documentation, while certainly technical in nature, is clear and thorough. Central Data's technical support staff are responsive; it was they who set us on the path to correcting our corrupted kernel. Given the golden opportunity effect that your environment has already and will continue to experience, the ST-2000 series of products is an economical, efficient way to give users what they want and keep your system running full-speed ahead. ■

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## UNIX

Miles B. Kehoe

# Rerouting HP-UX Mail

HP-UX, like most implementations of UNIX, includes

a flexible electronic mail (E-mail) system that allows you to share files with other users on your system and across the network. However, HP-UX mail begins to show its age when you want to send something other than ASCII text.

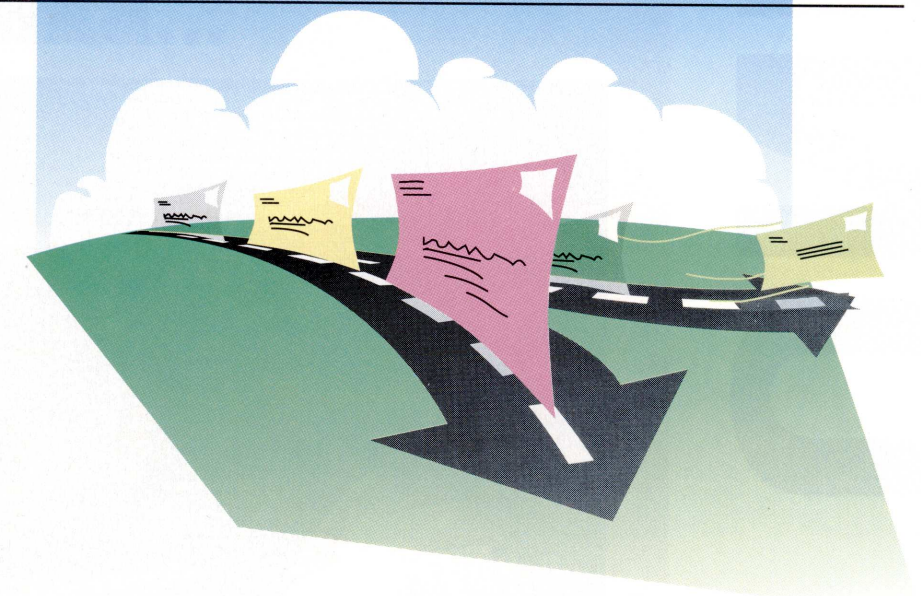
When UNIX was first introduced, just having the ability to send text and ASCII files electronically to a colleague was a major advance. Prior to that, "sneaker net" was the way most people shared files with users on other systems.

However, now that multimedia is no longer just a buzzword, and rumors abound about NT or NeXTStep on HP-UX platforms, it's time that HP-UX catches up to HP 3000 DeskManager and lets us send data files that include binary information like WordPerfect documents, 1-2-3 spreadsheets or TIFF files.

## Pickup And Delivery

We probably won't see an advanced mail system for HP-UX in the near future, but there are two standard utilities which, when used together, will let you send and receive binary files using HP-UX mail. One utility, **uencode**, converts a binary file into an encoded ASCII file for mailing. The second utility, **udecode**, converts the encoded ASCII file back to its original state. This pair of utilities are standard in virtually all UNIX environments and shareware versions of these utilities exist for your Vectra PC as well.

The **uencode** utility takes its input from the file you specify, or from the HP-UX standard input device if you don't provide an input filename.



It directs its output to the HP-UX standard output device. The syntax of **uencode** is:

```
uencode infile destname
```

or

```
cat infile | uencode destname
```

In the first case, **uencode** takes its input from HP-UX standard input piped to it from the **cat infile** command. In the second case, **infile** is the name of the HP-UX binary file you want to encode.

The **uencode** utility requires the person encoding the file to provide the name of the file that should be created when it is unencoded later. The name you choose, indicated as **destname** above, may be the same name as the original file or a different name.

Because the output of this command goes to the HP-UX standard output device, you will see dozens to hundreds of lines of encoded characters on your screen if you don't redirect the output to a file. Thus, if you had a binary file

called image1.gif you would probably use the command:

```
uencode image1.gif newimage.gif >
myimage.uu
```

This will create a file called myimage.uu on your local system which, contains the ASCII encoded contents of the original binary file.

When you mail this file to a colleague, and he uses the **udecode** command, HP-UX will create a file called newimage.gif on his system.

## Upon Receipt

When you receive a uuencoded file, you will need to decode it before you can use it on your system. The command to decode such a file is:

```
udecode codedfile
```

I'm not kidding. I know this is a rare occurrence in HP-UX and UNIX, but it's that easy. Because the name of the file to be created on your system was speci-



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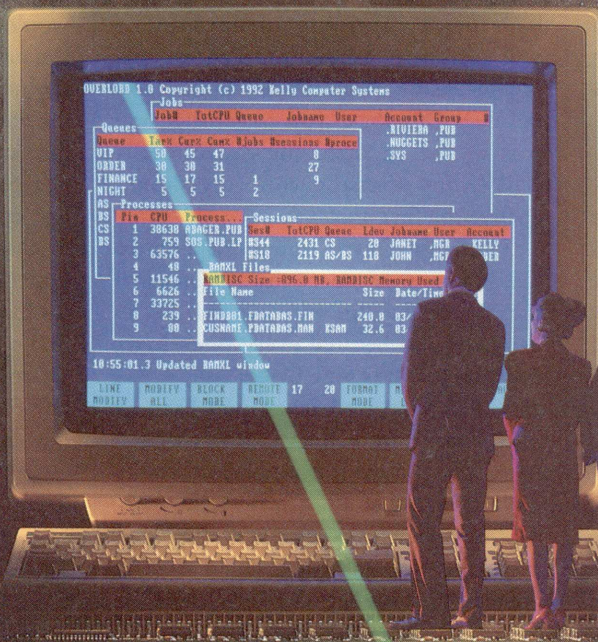
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fied when it was uuencoded, all you need to do is give **uudecode** the name of the encoded file.

As with any file you receive, you should be wary of possible virus contamination. When you **uudecode** a file, it could overwrite any file to which you have permission. Thus, be careful that you don't **uudecode** any files you're not sure about.

### Open With Caution

Luckily, because the encoded file is ASCII, you can examine and even change it with any ASCII editor. The first line of a uuencoded file has the word *begin* followed by the HP-UX permission and filename of the file to be created. The first line in the uuencoded file example above might be:

```
begin 755 newimage.gif
```

Note that if the person who encoded the file included the absolute path to the file,

it will be decoded to that directory if you have write permission to the file. So, don't use **uudecode** when you're logged in as root.

To be on the safe side, look at any uuencoded file with an editor or with *more* before running **uudecode**. If you find the permission or filename unacceptable for your system, simply edit the line. Of course, you can change any part of the encoded file because it is ASCII, but normally you only should change the first line.

Finally, when you **uencode** a binary file, it takes more space than the original file. Typically, this increase will be 33 percent or so because every three bytes is expanded into four bytes. Still, it is a capability you need when you have to mail binary information.

As I mentioned, **uencode** takes its input from either a file or from the standard input device. So, to mail an encoded binary file you can use a single HP-UX command. Consider:

```
uencode binfile.org binfile.rem | mail  
mbk
```

This line will create a uuencoded file based on the local file *binfile.org*. When you receive a file by HP-UX mail, you would copy the mail message to a file. Because most HP-UX mail programs save the mail header information along with the file, you may need to edit the file before you can run **uudecode**. The first line of the file should be the *begin* line you saw earlier.

Once you have saved the file and edited out the mail headers, simply run **uudecode**. When it's complete, you'll find a new file in your local directory. Of course, I'd be sure to check the first line of the file first to confirm that I did not receive a virus in disguise.

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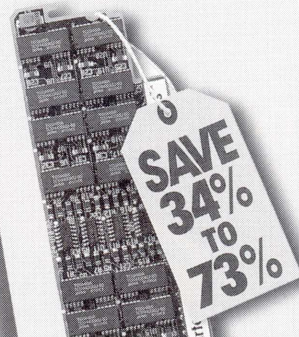
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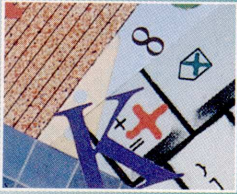
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## UNIX SYS\_ADMIN

Fred Mallett

since my college days. It does, however, describe my contribution to your system administration knowledge base for this month. The following is simply a selection of techie tips from various sources.

Have you ever seen those programs that print prompts and other output in color instead of the normal text color (usually black)? In HP VUE 3.0 you can do this even in shell scripts run in hpterm. I'd love to say I fully understand this, but I haven't been able to find documentation on it as of yet. I was tipped off to this by "the Gang in Cedar Rapids," but the key sequences needed to type this in were missing, so we spent some time figuring out the correct way. Here they are. The following example will print the word *green* in green, if you're running the default color maps.

```
echo '^&v2SGREEN^&v0$'
```

This line inside quotes is typed in using the following keystrokes, note that you never hit the ^ or [ keys.

```
<ctrl>v <esc> & v 2 S GREEN <ctrl>v <esc>
& v 0 $
```

The documentation I read showed this typed as <ctrl> v[ — and it doesn't work. You type in the <ctrl> v, which prints a ^, then when you hit <esc> , the system prints the [ character. What this control escape sequence does is set the color to entry No. 2 in the current

# Eclectic Mix

"Eclectic" is one of those words that I haven't used

color palette, the second sequence sets it back to 0. In an echo command, as in the above example, the second ctrl escape sequence is not needed, as the text will return to normal without it. To print in other colors, use numbers other than two; eight colors in a palette. Palettes can be displayed or set with the style manager. On a grayscale monitor, you will get varying shades.

The first example of this I saw was written by Jim Rice of Hewlett-Packard in St. Paul, MN. It was used to set the shell prompt in hpterm to a different color, by putting the following in the .kshrc file:

```
PS1='^[&v2S${HOST}>^[v0$'
```

Note that none of this works in an xterm.

## End Of The Log

The next tip offers insight as to how to watch a file to see if it grows, such as when a log file is written to. This is really quite simple, and useful. I found this by reading the man page on the **tail** command and being curious about what the authors meant by "-f follow." The -f option of the tail command, means for tail to read the end of a file as specified, then not to exit, but instead to go into a one-sec sleep loop, and keep checking the file for more input. An easy way to see this is as follows:

```
$ tail -f #enter tail with no
options so it reads from std-in
I typed this text in at the key board
***EOF***
I typed this text in at the key board
$
```

The **tail** command read one line (all I typed in), then when I hit the <ctrl> D as end of file, it printed the line and exited. In the following sample I used the -f option:

```
$ tail -f
I typed this text in at the key board
***EOF***
I typed this text in at the key board
then I typed this
***EOF***
then I typed this
and this could go on forever so I did a C
$
```

For a true-to-life example, you might try to watch a system log file grow, to see the latest errors real time. For example the following line will watch the syslog real time:

```
$ tail -f /usr/adm/syslog
```

## VUEPAD: Drag Till You Drop

Regarding vuepad under HP VUE 2, I run into many people that aren't aware that you can drag and drop text files into vuepad to read (or edit) the file. The trick is really an omission of the default set-up. vuepad must be open in a window, then you use the middle mouse button (M2) to drag the file into the window, it will be displayed by vuepad. When vuepad is closed in the front panel the symbol appears that you can drop there, but nothing happens. In VUE 3.0 you can drop onto vuepad while it's open or closed.

Another thing that I've found to be commonly overlooked is the function of the mouse 3 button in hpterm. For Domain/OS people, this is the "again" key. To use it, point to the text you want with the mouse sprite, then click M3. The text under and to the right of the cursor to the end of the line will be copied to the shell input, and note that the <cr> also will be copied, which means



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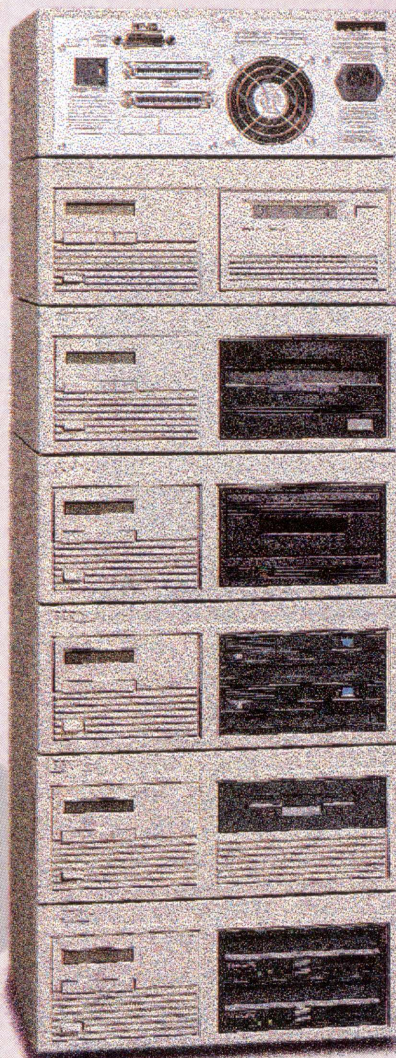
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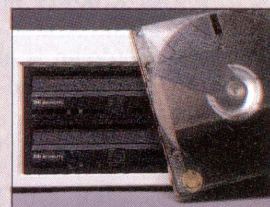


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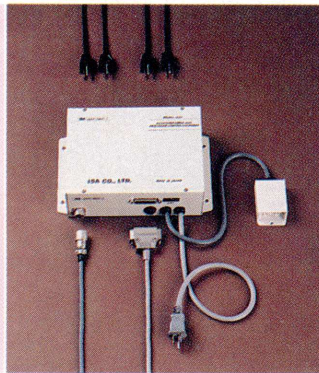
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the command will be executed as is, — which is unlike the "again" key that pasted it for editing. For that function, you need the korn shells built in command recall, or a DOS machine :-).

### Clean It Up

For those running the 9.xxx version of HP-UX, there's a good tool that lives in /system/TOOL — it's called FreeDisk. If you've never run it, read the README file in the same directory. This tool will do some disk searching for you to see if your install was the slim, trim version we all hope to have installed. That is, it looks to see if you have used all the "stuff" (filesets) you installed, by comparing the access time with the install time to see if the product has been used. Amazing enough, the Russian language fileset hadn't been used in one year on my system.

The second two phases of the program look for overgrown log files, and big/old/un-owned files respectively. These can be handy for locating core files and such, but don't just go deleting all the big files it reports, or you'll find yourself "in a heap o' trouble." It reports all files over 500 KB, which include things like /usr/bin/X11/X among other rather important files. This is rather nice to run before you upgrade a machine from HP-UX 8.x to 9.01.

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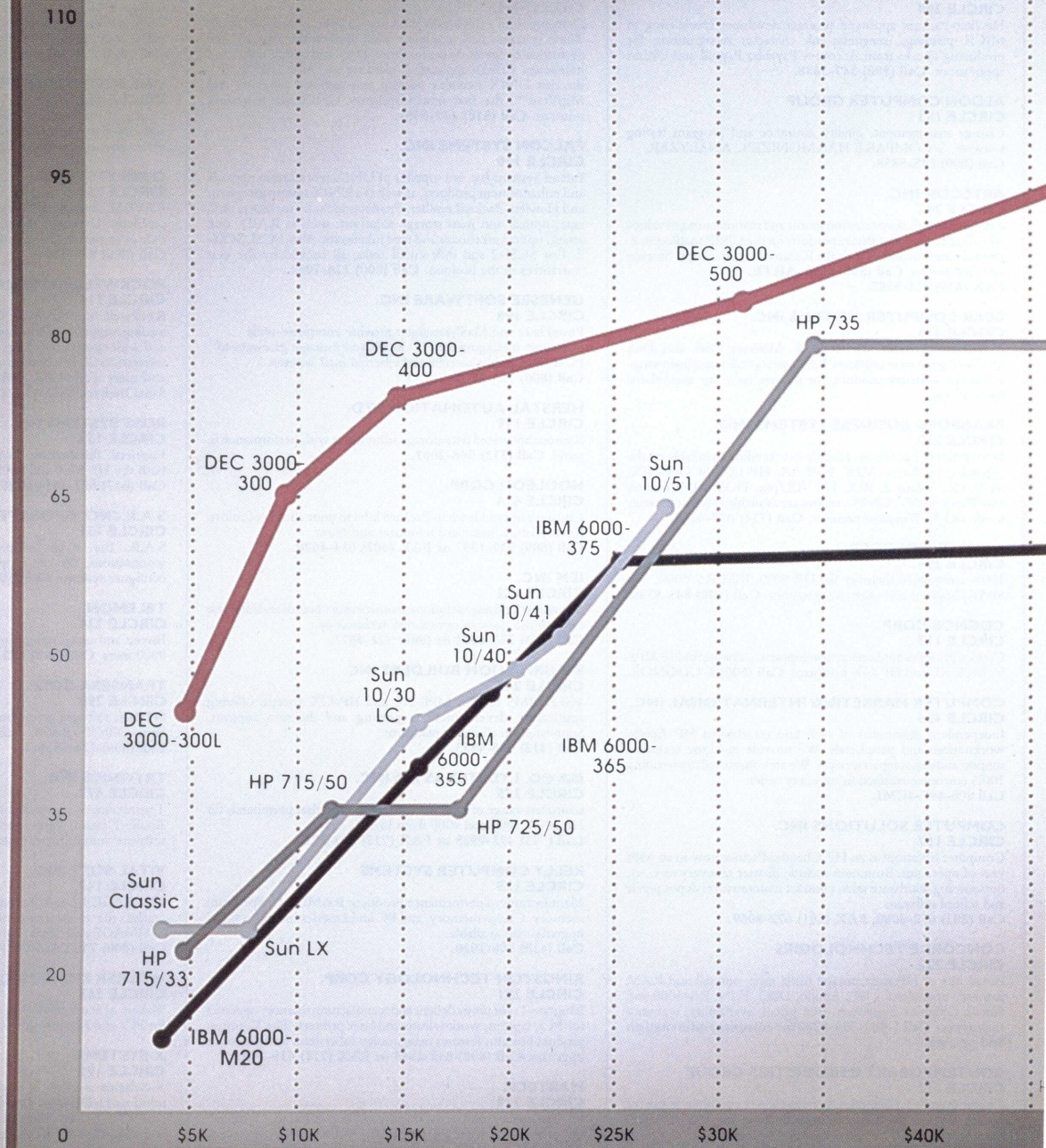
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Prices range from \$449 to \$745 depending on model.

Contact Wilco AMS Inc., 333 17th St., Ste. K, Vero Beach, FL 32960; (800) 854-6548; (407) 770-9966.

**Circle 400 on reader card**

## VisionWare Offers Upgrade Incentives

VisionWare announced incentives to upgrade users of competitive PC X Servers to XVision, its Microsoft Windows-based X Server. The upgrade incentives are targeted at users of other PC X Servers, Reflection products and TGRAF/TNET terminal emulators.

PC users that require access to X Windows applications available across the corporate network can upgrade any brand of PC X Server to XVision.

XVision features setup options that facilitate server configuration to the individual user's environment, while automatically optimizing and tuning performance to the user's PC system. XVision also delivers

extensive network communications support and is compatible with TCP/IP.

Contact VisionWare, Menlo Place, 1020 Marsh Rd., Ste. 220, Menlo Park, CA 94025; (800) 949-8474; (415) 325-2113.

**Circle 399 on reader card**

## Introl Supports 16 Platter Jukebox

Introl Corp. announced its support of Hewlett-Packard 16 Platter Erasable (Magnet) Optical Subsystems for Sun and Silicon Graphics workstations.

With formatted capacities of up to 10.4 GB, these subsystems are solutions for a wide range of applications including graphic libraries, database archives and CAD/CAM. The subsystems include a standalone jukebox, cabling, full documentation and Introl's SCSI-FLEX jukebox software driver. Introl's SCSI-FLEX software and device drivers make installation and configuration easy.

A 16 Platter Erasable Optical Jukebox Subsystem including Introl's SCSI-FLEX Software features up to 10.4 GB of formatted optical storage, custom device driver with

auto-installation, window-based management and command line utilities, reliable rewritable media, complete documentation and technical support.

Contact Introl Corp., 2817 Anthony Lane South, Minneapolis, MN 55418-3254; (612) 788-9391.

**Circle 396 on reader card**

## CA Opens Databases To Windows Applications

Computer Associates International Inc. announced support for Microsoft's ODBC (Open Database Connectivity) for its mission-critical database management systems, application development products and end user tools.

Windows applications with ODBC API calls will access directly CA-IDMS, CA-DATACOM and CA-DB on multiple platforms through new database drivers that are available. Also, tools from CA — including CA-Visual Objects, CA-REALIZER, CA-QbyX and CA-RET — will have access to corporate data in CA and third-party databases through their support of ODBC.

Contact Computer Associates International Inc., One Computer Associates Plaza, Islandia, NY 11788; (516) DIAL CAI.

**Circle 395 on reader card**

## Bradmark Enhances DBGENERAL

Bradmark Technologies Inc. announced version 6.2 of DBGENERAL. The enhanced product includes Options 2.7, 3.3 and 6.6.

Option 2.7 performs all the diagnostics and repairs for the detail datasets in native mode. With one pass, it detects and records virtually all problems that can plague a detail dataset, including bad bitmaps, delete chain pointers, inconsistent user labels, chain pointers and corrupted keys.

In Option 3.3, the master capacity change in native mode has been enhanced further from V6.1. This second generation NM module runs four to five times faster for the



**HP 16 Platter Jukebox.**



primaries and is more than twice as fast for synonyms as compared to V6.1's module.

Option 6.6 is a windows-driven, multibase, native mode version of a product called BaseBuilder. This option is included free for any customer who owns section 6. This applies only to MPE/iX customers with current maintenance.

Contact Bradmark Technologies, 4265 San Felipe, Ste. 800, Houston, TX 77027; (713) 621-2808.

**Circle 393 on reader card**

### **Dataram Debuts Expansion Memory For 9000**

Dataram Corp. introduced a broad line of memory upgrades for HP 9000 Model 735/755 RISC-based workstations.

The new DR9755 memory boards, available in 16-MB, 32-MB, 64-MB and 128-MB capacities, offer a 20 percent savings over HP's expansion memory.

The memory can be installed in any combination of 8-MB and 16-MB boards, allowing users more flexibility as they increase memory. It is installed as pairs of boards that use 4-Mbit, fast-page mode, surface-mount DRAMs and state-of-the-art 16-Mbit DRAMs (in models DR9755D/64 and DR9755/128).

Contact Dataram Corp., P.O. Box 7528, Princeton, NJ 08543-7528; (609) 799-0071.

**Circle 394 on reader card**

### **Genesee Software Markets MAUI Vision**

Genesee Software Inc. completed a joint marketing agreement with TPS Business Software Ltd. in which Genesee Software was granted marketing and distribution rights to the MAUI Vision report management product in North America.

MAUI Vision is a full-featured, report management product that provides end users on-line access for viewing production reports. Using MAUI Vision, users can direct portions of reports to any printer attached to a terminal, a PC or the HP 3000.

MAUI Vision also automatically handles multiple archived versions and the aging of reports, and includes security technology that provides protection for sensitive information. It is licensed by the number of concurrent users of the software. Prices start at \$250.

Contact Genesee Software Inc., 25107 Genesee Trail Rd., Ste. 200, Golden, CO 80401; (303) 526-1500.

**Circle 391 on reader card**

### **Fusion Provides Networking Services**

WorkStation Source launched FUSION networking software into the European market.

FUSION uses the TCP/IP transport protocol, enabling it to connect among the five major operating systems via an Ethernet network. FUSION software works with any LAN card from the leading manufacturers to speed data along at the 10 Megabit per second Ethernet rate.

FUSION provides Virtual Terminal Emulation to make the workstation appear as if it were directly connected to a remote computer and run applications remotely. Files can be transferred between the workstation and any other computer on the network and the workstation can be transformed into a file server, accessible by other workstations on the network.

Two built-in network management families, Packet Monitor and Network Status, monitor traffic on the network and aid in diagnosing network problems.

Versions are now available for HP 9000 Series 200 and 300 running BASIC and PASCAL.

Contact WorkStation Source Ltd., 16 Auckland Close, Maidenhead, Berkshire SL6 8QB England; 44 0 628 75252.

**Circle 388 on reader card**

### **SPACECONTROL 2.0 Provides Improved Trend Analysis**

OCS released SPACECONTROL 2.0, a disk space management and analysis product that

## **HP Workstation Memory**



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Introducing TransEra HTBasic for the HP 700. Finally, all of the features that have made HP "Rocky Mountain" BASIC the most universally recognized engineering and scientific control language are available on the world's best performing workstation, the HP Series 700.

For years HTBasic (compatible with HP 9000 Series 200/300 BASIC) has provided all of the familiar HP BASIC functionality like HP-IB instrument control on the IBM PC platform. Now it can all be yours on the HP 700.

And HTBasic allows effortless transfer of HP BASIC 5.0 HP-UX program and data files from the 200/300 to the 700 and back.

Now, running your HP BASIC programs in HTBasic on the new Series 700 workstations provides unsurpassed speed, power, ease of use and superb compatibility.

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## NEW PRODUCTS

provides improved disk usage trend analysis and greater archive flexibility.

SPACECONTROL allows you to specify program options in third-party backup software packages. Packages currently supported are BackPack, BACKUP+, HIBACK, MPE STORE and Turbo STORE. Also, SPACECONTROL can manage optical disk storage devices. This capability is especially useful for environments that archive large numbers of files.

SPACECONTROL 2.0 now offers new analysis parameters, expanded report options and expanded on-line help.

Contact Operations Control Systems, 560 San Antonio Rd., Palo Alto, CA 94306; (415) 493-4122.

Circle 384 on reader card

### Z-Code Delivers Z-Mail Lite

Z-Code Software introduced Z-Mail Lite, a new character-based, full-screen version of the Z-Mail commercial UNIX E-mail package.

Z-Mail Lite provides users of character display devices with the same look, feel and functionality as the X-Windows/Motif graphical version of Z-Mail. The Lite version features the same user interface elements, such as menus, buttons, pop-up dialog boxes and list widgets, that make the graphical version of Z-Mail easy to use.

Each main dialog box of the graphical user interface is mimicked with a character-based screen, providing separate screens for such tasks as message-reading, message composition, variable-setting, message summaries and interactive help. The Z-Mail Lite menus are structured to match the graphical menus, including accelerator keys. Additionally, keystrokes perform the same functions as their GUI counterparts. All keystrokes, including the function keys, are user-redefinable.

The Z-Mail Lite announcement also marks the introduction of the new Directory Look-up Service for message compositions. With this new functionality, the user can review a site-specific, scrollable list of recipient names and E-mail addresses.

Z-Mail Lite is available for single users and multiuser sites. A single license fee is \$235 and a 10-user license is \$1,995.

Contact Z-Code Software Corp., 4340 Redwood Hwy., Ste. B-50, San Rafael, CA 94903; (415) 499-8649.

Circle 385 on reader card

### R Squared Adds HP Compatibility

R Squared announced that its Infinity IFS 10G, 20G, 60G and 100G products are now compatible with HP 9000 Series 700 platforms.

The Infinity line of optical products expands as your data storage needs grow. Also, the products provide a graphical user interface and a variety of other features to improve speed and increase capacity.

The Infinity line is suited for HP end users with applications such as CAD/CAM, medical, financial and GIS.

Contact R Squared, 11211 E. Arapahoe Rd., Englewood, CO 80112; (800) 777-3478; (303) 799-9292.

Circle 382 on reader card

### SmartDock Provides Connectivity For HP 95LX

Sparcom Corp. introduced the first intelligent docking stations for palmtop computers. Designed for the HP 95LX, the SmartDock family of products offers a simple means of connecting the palmtop with facsimile machines, electronic information services, printers, desktop PCs and Macintosh computers.

The SmartDock system is comprised of the SmartDock ComStation and the SmartDock PrintStation. The ComStation docking station connects the HP 95LX to facsimile machines, E-mail networks, parallel printers and any desktop computer. It comes complete with built-in fax/modem, serial-parallel converter and rechargeable batteries and will work with both 512K and 1-MB versions of the HP 95LX. It is priced at \$399.95.

The PrintStation connects the HP 95LX to parallel printers and desktop computers. It has a built-in serial-parallel converter and will work with both 512K and 1-MB versions of the HP 95LX. It is priced at \$169.96.

Contact Sparcom Corp., 897 NW Grant Ave., Corvallis, OR 97330; (503) 757-8416.

Circle 380 on reader card

### Wollongong Ships PathWay Messaging

Wollongong announced it is shipping PathWay Messaging, its new family of open systems products based on internationally recognized standards for open systems that provide enterprise-wide access to local, regional and global message handling and



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directory services. PathWay Messaging challenges the restrictive and proprietary E-mail solutions that do not meet the requirements for inter-departmental messaging.

The PathWay Messaging products feature

a UNIX-based, multiprotocol backbone mail switch (PathWay Messaging Services) and a desktop messaging application (PathWay Messenger) for PCs, Macintoshes and UNIX workstations.

PathWay Messaging provides integrated

X.400 message handling and X.500 directory services for desktop computers. It also provides an architecture that paves the way for future services, such as document retrieval, message switching and mail-enabled applications.

PathWay Messaging Services (server) is priced at \$9,495. PathWay Messenger (standalone E-mail client) is priced at \$195. Contact The Wollongong Group, 1129 San Antonio Rd., Palo Alto, CA 94303-4374; (415) 962-7100.

Circle 379 on reader card

## Sybase Users Get New Development Tool

Progress Software Corp. and Sybase Inc. announced Progress SYBASE Gateway. It will enable developers to rapidly build on-line applications with the Progress Application Development Environment (ADE) that read and update data in the SYBASE SQL Server software.

The Progress SYBASE Gateway is designed for SYBASE-specific application development and for situations where applications need to integrate information from Multiple data sources including the Progress RDBMS and the SYBASE SQL Server product.

To achieve high performance in on-line systems, it uses Sybase's native DB-Library to access the SQL Server product. It also includes support for stored procedures and database triggers.

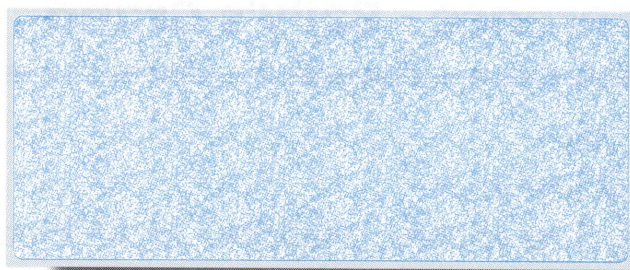
The product will be available for several platforms, including the HP 9000 Series. Contact Progress Software Corp., 14 Oak Park, Bedford, MA 01730; (617) 280-4000.

Circle 378 on reader card

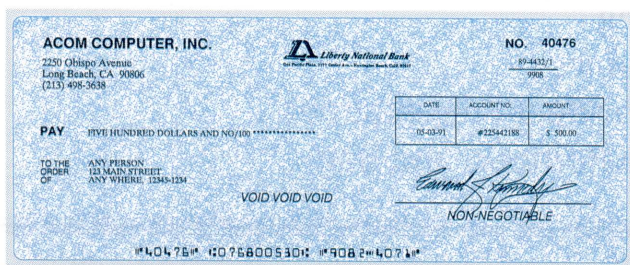
## Excalibur Ships PixTex/EFS 3.0 For HP 9000/700

Excalibur Technologies Corp. shipped its PixTex/EFS 3.0 document imaging software to a broader list of platforms including the HP 9000 Series 700. The new version of the software automatically indexes, stores, retrieves digital information, making it fast, accurate and easy to store vast amounts of data.

Key features include automatic full-content indexing where full text is automatically indexed each time a document is filed or a new page is added to a document; pattern recognition-based retrieval which allows you to search with free-form queries on full-text contents, document names and



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You can take secure information from your host and download it to a remote site to produce completed checks. It's both convenient and secure.

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ACOM MICR laser check printers eliminate the need to buy costly pre-printed checks, expensive bursters, refanners and signature stamps.

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You can use your ACOM MICR printer for other applications besides check writing. These printers handle processing, bar codes and forms, too. Let ACOM solve your check writing problems. Call (800) 347-3638. In California, call (310) 424-7899.

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file labels; options for client-server computing architecture and more.

The software provides links to external database including Oracle, Informix, Digital, Rdb, Sybase and Ingres. Excalibur also provides LAN support through TCP/IP to PC and Macintosh clients in UNIX environments.

Contact Excalibur Technologies Corp., 9255 Towne Centre Dr., San Diego, CA 92121; (619) 625-7900.

**Circle 375 on reader card**

### **Bristol Group Introduces PowerBase/Workgroup**

The Bristol Group introduced PowerBase/Workgroup, a client-server software package that allows networked users to schedule workgroup activities together. It also streamlines the use of telephone, fax, E-mail, postal and express mail tasks.

PowerBase/Workgroup supports OpenLook and OSF/Motif and runs on HP Apollo 9000 Series 700 and 800 and other workstations.

The main window of PowerBase/Workgroup looks like an address book in

which users can either enter names, addresses, phone, fax and E-Mail addresses. By using Open Look- or Motif-based tools, users can update the database with no reduction in performance. Workgroup-style access is built into PowerBase/Workgroup without sacrificing confidentiality. Each user controls his own confidential database.

A single-client license costs \$395; a server license costs \$995; a six-user client license with a server license costs \$2,490.

Contact The Bristol Group Ltd., 100 Larkspur Landing Circle, Ste. 200, Larkspur, CA 94939; (415) 925-9278.

**Circle 390 on reader card**

### **Infotek Extends Memory For The 730 And 735**

Infotek Systems introduced extended memory systems for your HP 9000 model 730 and 735 workstations.

Infotek Systems' EMS 730-256 and 735-384 consists of four 64 Mbyte memory modules and a custom chassis extender. The EMS features and additional airflow chamber and cooling fan, 16 gauge steel for monitor support, 5.25" or 3.5" disk/tape bays for

optional SCSI peripheral installation and allows for future upgrades of either processor or memory.

Contact Infotek Systems, 1120 Spring St., Klamath Falls, OR 97601; (800) 883-3900.

**Circle 389 on reader card**

### **SortMagic/XL 2.0 Improves Data Retrieval And Sorting**

Magic Software released SortMagic/XL, version 2.0. SortMagic/XL is based on algorithms and implementation techniques suited to the RISC architecture and therefore reduces CPU time. Also times for retrieving and sorting data from Image databases has been reduced. The interface to databases has been improved as well to ease data access.

Contact Magic Software, 4786 South Olathe Way, Aurora, CO 80015; (800) 624-4255.

**Circle 376 on reader card**

### **X-Systems Supplies Fast And Wide SCSI Disk Drives**

X-Systems Inc. introduced a line of new fast and wide SCSI 2 disk drives for the HP Apollo 9000 Series 700, models 735 and 755.

The "Cheetah" series, ranging from 1 to

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20 GB subsystems, offers the highest performance in SCSI disk storage with data transfer rates of 20 MB per second. The drives spin at 5400 rpm which provides a media transfer rate of up to 42 megabits per second.

Fast SCSI refers to the frequency in which 8 bits of data are transferred through the SCSI

channel. Fast and wide SCSI transfers data 26 bits at a time. Also, up to 14 other fast and wide SCSI devices can be added to the same SCSI channel.

Prices range from \$2,155 for the 1 GB internal model to \$28,995 for the 16 GB system.

Contact X-Systems Inc., 2820G Wilderness Place, Boulder, CO 80301; (303) 443-5343.

**Circle 397 on reader card**

## Frontender! Creates Client-Based Windows Interface

Zebra Software released Frontender! for Windows 2.1, and HP and DEC client-server interface development tool that now supports Reflection for Windows and embeds Windows graphics.

The new version of the PC-based software works as a toolbox to link Windows-based PCs with programs on HP and DEC servers. Frontender! tools create a client-based Windows interface with server-based applications. The 2.1 version of Frontender! supports WRQ's Reflection for Windows terminal emulator. Frontender! also supports HP's AdvanceLink for Windows and Tym-labs' Session for Windows terminal emulators.

Frontender! for Windows 2.1 now lets users hot-link Windows graphics to client screens. The ZTool Box palette of Frontender! now includes a Picture Box object, a new palette button that places bitmaps, metafiles or other Windows graphics output on Frontender! screens. ZTool Box users can paste graphics such as metafiles and bitmaps onto backgrounds, or hot-link output such as charts from spreadsheets like Excel. Contact Zebra Software, 2108 LeWood Circle, Austin, TX 78745; (512) 444-3320.

**Circle 387 on reader card**

## Tryonics Sponsors Technical Consulting Group

Tryonics Inc. is now offering system administration and network consulting services through its newly formed Technical Consulting Group (TCG).

Primarily targeting the UNIX workstation network marketplace, TCG is providing customers a total network operations support solution. Noting the industry acceptance of data center/telecommunication outsourcing, TCG is offering onsite network support including network installation, UNIX system administration, platform integration, help desk and more).

Preferring to use existing staff wherever possible, TCG can maintain day-to-day network operations while using its own network expertise to plan ahead for their customer's future distributed information technology requirements. TCG is also available on a project basis and PC network

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management service is planned to be offered in Q3.

Contact Tryonics Inc., 170 West Rd., Suite 15, Portsmouth, NH 03801; (603) 427-6850.

**Circle 377 on reader card**

### **Ganson's G30 Printer Ships With HP PCL5 Emulation**

Ganson Engineering added its G30 printer to its printing products.

The G30 is a 30 page-per-minute laser printer designed for high-volume laser quality printing applications in mainframe, mini and networked environments.

The G30 comes standard with HP PCL5 emulation. The PCL5 emulation includes eight scalable and seven raster fonts. Optional emulations include those for IBM, DEC Wang minis and mainframes, and Postscript for any system including three scalable Postscript fonts.

Connectivity options include RS232, Centronic parallel, RS422, Ethernet, TCP/IP and more. The standard controller is a 16 MHz Motorola 68020 with 10 MB of RAM. The G30 comes with dual 3.5" floppy disk drives, or with one floppy and one 52 MB optional hard drive for operating systems, font, form and logo storage.

Contact Ganson Engineering Inc. 19145 N.E. Wood-Dvl Rd., Suite D-117, Woodinville, WA 98072; (206) 788-8010.

**Circle 398 on reader card**

### **Bear Offers HP-UX/MagicDisk On HP Series 700**

Bear Computer Systems announced HP-UX/MagicDisk a virtual disk and shadowing package for the HP 9000.

With the pseudo disk feature, disks can be divided into sections that look like separate disks to the operating system. Memory disk creates a fast temporary software-based disk from either physical or paging memory. Bear's ResQue disk backs up data across a network, including WANs, in real-time without impacting transaction times. With volume management disks can be bound together so that a filesystem can span multiple partitions.

HP-UX/MagicDisk shadowing provides data fault tolerance and improves read performance.

Contact Bear Computer Systems Inc., 9584 Topanga Canyon Bl., Chatsworth, CA 91311; (800) 255-0662.

**Circle 381 on reader card**

### **Lightwave's VDE/200 Uses Fiber For Video Format Needs**

Lightwave Communications introduced the VDE/200 System that converts the high resolution video signal to light and transmits the light signal over a fiber optic data link.

The VDE/200 System has a Transmitter unit that is located at the workstation and a Receiver unit located at the display. The two units are interconnected with a fiber cable. The transmitter converts the electrical signal to a light signal and transmits it over the fiber to the receiver which converts the light signal back to an electrical signal. Standard copper cables connect the transmitter to the workstation and the receiver to the display and since they total only about 15 feet in length the have little effect on signal quality.

For displays with peripherals such as a keyboard/mouse or printer the VDE/200 system provides a data link between the display and workstation.

VDE Models range in price from \$2,500 to \$4,000 plus the fiber data link.

Contact Lightwave Communications, 84 Research Dr., Milford, CT 06460; (203) 878-9838.

**Circle 383 on reader card**

### **ISICAD, HP Provide Network Management Solution**

ISICAD Inc. introduced Comprehensive Network Management, a set of applications available for HP's new integrated enterprise network management solution, allowing companies to manage network resources across heterogeneous networking environments.

As a result of a two-year alliance with HP, and working as an OpenView Premier Partner, ISICAD has extended Comprehensive Network Management to TCP/IP, NetWare, DECnet and SNA environments. This new solution provides access to logical and physical connectivity information integrated with trouble-ticketing functions across multiprotocol enterprise networks via a central management station.

Comprehensive Network Management is comprised of ISICAD's COMMAND physical network management software package, COMMAND HelpDesk capabilities and HP's OpenView logical network management system, all integrated on a single management station.

Contact ISICAD Inc., 1020 West Corporate Way, P.O. Box 61022, Anaheim, CA 92603.

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This utility allows the HP Series 200/300 to initialize DOS formatted diskettes, read, create and write DOS data files.

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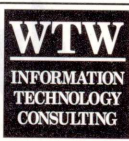
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**Gordon  
McLachlan**

are "Microsoft Windows-compatible," but my computer's not, and apparently, neither am I.

I bought my 386/33 IBM clone two and a half years ago to replace an aging Vectra with a 40-MB Harley/Davidson kick-start disk drive. At the time, the 386/33 was the fastest machine I could get, and I made sure I had plenty of disk space, or so I thought. I figured all that horsepower and 200 MB of disk space would give me plenty of headroom. Boy, was I wrong.

Now I've got Windows 3.1 and 11 applications eating up more than 130 MB of disk space, and I'm vainly searching for the 50 MB I need to load Microsoft's Visual C++ compiler and tools. At this rate, it won't be long before I have to spring for a new 486 machine with 500 or 600 MB of disk and a CD-ROM drive. That ought to take care of my hardware problem—at least temporarily. But what about my poor head?

I presume I'm not a dope — at least that's what I keep telling the editors here. But I find the chrome on most of today's software packages a little overwhelming. To justify eating up my machine the way they do, software vendors have poured their hearts and souls into making their applications as complex and feature-rich as possible, and I just can't assimilate it all.

For any one application, all the new tricks and gadgets might seem like a great idea, but in toto, this creeping featuritis is excessive. Some of us actually have to use our software. If I could just study it and admire it, I might be more impressed.

I'm a stranger in a strange land. All my PC applications

**Installing  
a Windows app is  
like inviting your bum  
uncle to move in  
for a while.**

The upshot is that I wind up ignoring the bells and whistles, and "dumb-down" the applications I use. Despite all its statistical prowess, macro-programmability and graphics wizardry, I still use Excel like it was nothing more than a Lotus 1-2-3 clone. I have WordPerfect, but I use it like a text editor with fancy font capabilities. Occasionally, I get exotic and use hot-links between spreadsheets, or embed a graphics file into a word processing document, but most of the time I just have to keep things simple.

### **Hold The Macros**

Every package I own also seems to come equipped with some bizarre proprietary macro-programming language. Each of these is about as complex as BASIC, or perhaps a bit hairier if it's got a lot of functions to call, like Excel does. That's a lot of stuff to learn, and frankly, I've lost my enthusiasm for the task.

When I first bought Lotus 1-2-3, macros were a unique concept, and I spent a lot of time toying with them. By now, I'm sickened by the thought of learning another macro language. So all these features do is sit there, sucking up my valuable drive space.

That brings up another problem with Windows applications. Installing a Windows app is like inviting your bum uncle

to move in for a while. Once they've moved in, they're not going anywhere without a fight. Sure, it's easy enough to install one of these user-friendly applications, but just try to get rid of it, or worse yet, try to dump just part of it. Half the time, you can't identify all the files that were loaded or changed because some of them always wind up in the Windows directory. And you erase files from that dark place only at some uncertain peril to your system's health.

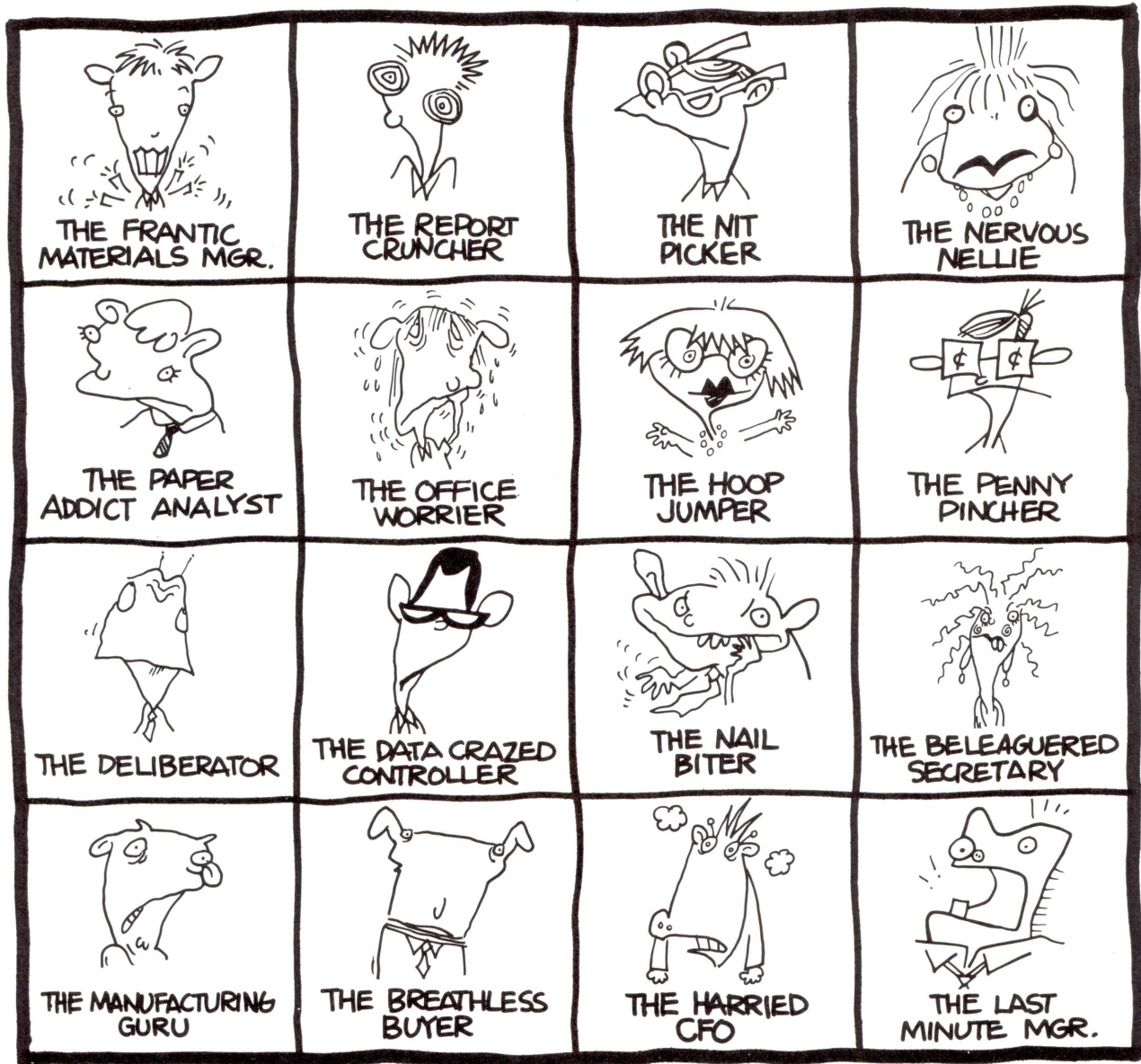
For example, I once made the mistake of de-installing a text editor from HP NewWave. I immediately re-installed it, but now I can't open up any of the documents I created before. Oh, I have faith that I'll get everything fixed one of these days, but it's sure to involve a lot of scrounging through help screens and much wailing and gnashing of teeth.

Documentation for these packages is also becoming a sore spot. Three or four manuals per package seems to be the norm, and one of the more absurd examples, Microsoft Visual C++, comes with a dozen books to read in my leisure. Of course, some packages, like NewWave and the CompuServe Information Manager, forego printed documentation and make you forage through semi-adequate on-line help files. So you wind up buying more books — some of them to condense the information in the manuals into a manageable lump, and others to expand the help files to make the packages usable. Regardless, it's too damn much stuff.

One of these days, we might see a common macro language, adequate on-line help, and disk compression utilities that work without blowing away our systems. In the meantime, I guess we'll just keep playing the hardware upgrade game. I just wish I could upgrade my brain-pan.



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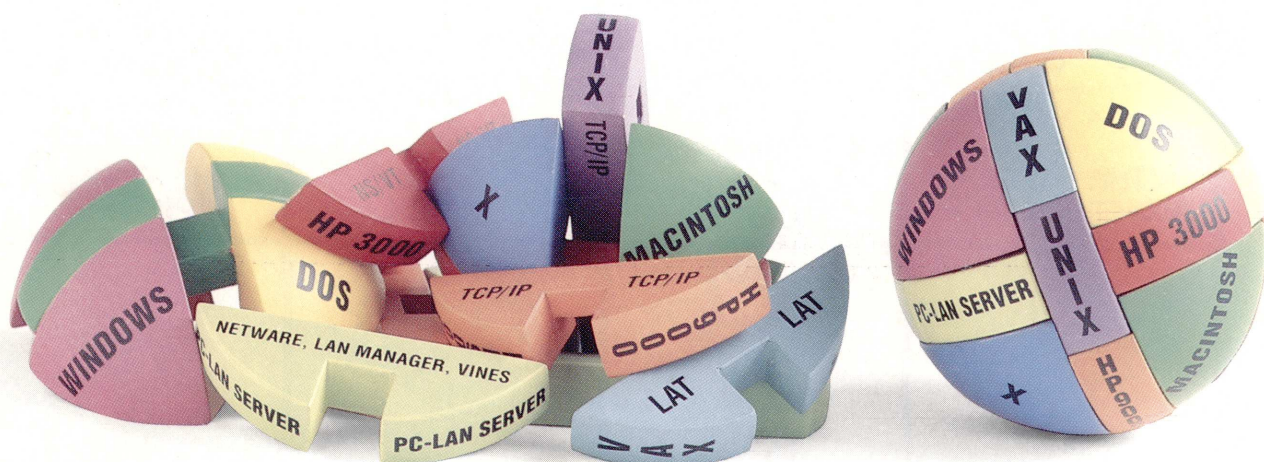
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